Research School of Accounting

Does the Manager Matter to Users of Management Earnings Forecasts?

by

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Certificate of Authorship

I, Tejshree Kala, hereby declare that, except where otherwise acknowledged in the customary manner, and to the best of my knowledge and belief this work is my own, and has not been submitted for a higher degree at any other university or institution.

Signed:

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Tejshree Kala

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Abstract

Prior research provides evidence on how manager attributes affect characteristics of management earnings forecasts and how firm characteristics affect market participants' perception of the credibility of management earnings forecasts. Using a manager-firm matched panel dataset, this thesis examines whether the perceived credibility of management earnings forecasts, as measured by investors' and analysts' responses to management earnings forecasts news, are influenced by: (1) the forecasting track records of individual managers, and (2) manager attributes. The results indicate that, overall, investors' responses to management earnings forecasts vary with the firms' forecasting track records but not with the forecasting track records of individual managers or with manager attributes. The results indicate that analysts' responses to management earnings forecasts are positively associated with managers' individual forecasting track records. Results also indicate that analysts react less strongly to management earnings forecasts issued by CEOs with CFO experience, and react more strongly to management earnings forecasts issued by managers who are also the chairperson. Overall, the results suggest that analysts, being more sophisticated users, consider both manager- and firm-specific characteristics in their assessments of management earnings forecasts. This thesis contributes to the literature by providing a more comprehensive understanding of whether manager-specific forecasting track records and manager attributes matter to investors and analysts. The findings reported in this thesis may help to inform the communicators (firms and managers) of management earnings forecasts about what matters to users, which may help them vary their forecasting behaviours. Results may also help inform boards of directors about what matters to users of management earnings forecasts and help the board better monitor managers in this regard, and, inform observers such as regulators and commentators in providing signals about what matters to users in terms managers' forecasting behaviours and attributes.

Contents

List of Tables

CHAPTER 1 Introduction

1.1 Introduction

Manager-provided earnings forecasts (hereafter 'management earnings forecasts'), typically issued on a per share basis, are an important source of forward-looking market information that market participants consider when predicting firm's future earnings (Graham et al., 2005).[1] Between 2009-2014, approximately half of the S&P 1,500 issued at least one management earnings forecast. Like with all communications, it is reasonable to expect that the credibility of both the source (firm and manager) and the content of the management earnings forecast (forecast characteristics) are considered by market participants. The literature on the credibility of management earnings forecasts has considered the content of the forecast, but has only largely examined the firm as a source. We have a limited knowledge of whether the manager matters as a source. The objective of this thesis is to examine whether the manager matters to users of management earnings forecasts. In particular, this thesis examines whether investors' and analysts' reactions to management earnings forecasts are conditioned by manager-specific prior forecast performance and manager attributes.

In their 2014 survey on earnings guidance practices of U.S. companies, the National Investor Relations Institute (NIRI) found that executives' two most commonly cited reasons for issuing management earnings forecasts were: (1) to manage earnings expectations of market participants, and (2) to increase transparency (NIRI, 2014). This is consistent with findings of

[1] This excludes earnings preannouncements (warnings) that are provided on or after the accounting fiscal period has ended but before earnings are announced. Management earnings forecasts are also referred to as management forecasts and earnings guidance.

academic studies that have found that management earnings forecasts can reduce information asymmetry (e.g., Coller and Yohn, 1997, Billings et al., 2015), and provide substantial new information to investors (e.g., Anilowski et al., 2007, Ball and Shivakumar, 2008, Beyer et al., 2010) and analysts (e.g., Waymire, 1986, Cotter et al., 2006), who often revise their forecasts within a few days of the management earnings forecast.

Management earnings forecasts can be short-term (twelve months ahead or less) and long-term (more than twelve months) forecasts of earnings. The forecasts can be in the form of point estimates (e.g. "about $0.10"), range estimates (e.g. "between $0.10 and $0.12"), open-ended estimates (e.g. "at least $0.10"), or qualitative statements (e.g. "may be below expectations") about the future performance of the company. Short-term point and range management earnings forecasts are the most common form of management earnings forecasts.

Despite the widespread practice of issuing management earnings forecasts and, evidence that they are informative, there are conflicting views regarding the issuance of management earnings forecasts. Proponents argue that: (1) more information is useful to market participants as it leads to less uncertainty (Janjigian, 2003); and (2) management earnings forecasts are especially useful for correcting market expectations for smaller companies that do not have much analyst coverage (Venkataraman, 2006, Johnson, 2007). Critics contend that issuance of management earnings forecasts can encourage managers to emphasise short-term goals at the expense of long-term goals; this view has been expressed by researchers (e.g., Fuller and Jensen, 2002, Morgan, 2003), regulators (e.g., Levitt, 2000), lobbyists (e.g., U.S. Chamber of Commerce, 2007), non-profit organisations (e.g., The Aspen Institute, 2016), the media (e.g., Zuckerman, 2005, Plitch, 2006) and managers (e.g., Sorkin, 2016). The managers of some firms, such as Google and Berkshire Hathaway, have expressed similar concerns and have

adopted strong stances against the provision of management earnings forecasts (e.g. Page, 2004, Belvedere, 2016). Other concerns are focussed on the credibility of management earnings forecasts (e.g., Miller, 2009).

While the purported motivations of managers when issuing management earnings forecasts seem defensible and the accuracy of management earnings forecasts can be verified when earnings are announced, managers' assertions in earnings guidance statements may not always be reliable. In the U.S., the issuance of management earnings forecasts is voluntary, the forecasts are unaudited and the Private Securities Litigation Reform (PSLR) Act 1995 safe harbor provisions shelter managers from litigation with respect to unattained projections when forecasts are provided in 'good faith'.[2] These circumstances suggest that, because management earnings forecasts are unverifiable at the time of announcement, and managers have significant discretion regarding forecast attributes such as forecast precision, there is scope for opportunistic bias in management earnings forecasts. For example, a media report about Eli Lilly and Company, reports that: "But analysts also noted that Lilly tends to lowball its guidance, and its 2015 results beat forecasts" (Staton, 2016).[3] Prior studies also provide evidence that managers have incentives to use management earnings forecasts strategically for self-serving purposes; for example, before: (1) raising external finance (Frankel et al., 1995) and seasoned equity offerings (Feng and Koch, 2010, Kim, 2016), (2) management buyouts (Hafzalla, 2009), (3) insider purchases and sales (Rogers and Stocken, 2005, Rogers, 2008, Cheng et al., 2013), and (4) stock option awards (Aboody and Kasznik, 2000), and in order to avoid missing analyst forecasts (Matsumoto, 2002, Cotter et al., 2006, Christensen et al., 2011).

[2] See Section 102 of the PSLR Act 1995.
[3] http://www.fiercepharma.com/pharma/lilly-ceo-lechleiter-nabs-16-6m-2015-pay

While it is generally accepted that management earnings forecasts must convey news for there to be a market reaction (Ball and Shivakumar, 2008), the extent to which market participants adjust their expectations in response to the news in the management earnings forecasts will be conditioned by the perceived reliability of the forecast (Jennings, 1987). Social psychology research argues that message credibility depends on both the message content and the source of the message (Hovland et al., 1953). This is reflected in the earnings forecast literature, which indicates that the perceived credibility of management earnings forecasts, as measured by stock market reaction and analyst reaction to the management earnings forecast news, varies with firm forecast-specific (message-specific) and other firm-specific characteristics (dimensions of the source).[4] Firm forecast-specific characteristics associated with the perceived credibility of management earnings forecasts include prior forecast accuracy (Hutton and Stocken, 2007), forecast consistency (Hilary et al., 2014), forecast specificity (Bamber and Cheon, 1998), forecast disaggregation (Lansford et al., 2013), forecast attributions (Chen et al., 2016), and forecast news (Rogers and Van Buskirk, 2013). Other firm-specific characteristics associated with the perceived credibility of management earnings forecasts include financial distress (Koch, 2002), litigation risk (Ng et al., 2013) and ownership structure (Ajinkya et al., 2005).

The general body of research on firm-specific characteristics accords with the proposition that message source matters. However, these studies have focussed on firm characteristics, but do not consider the influence of individual managers who are responsible for developing the earnings forecasts and who communicate the forecasts to the market.[5] This incomplete view of source credibility is surprising given the anecdotal evidence that analysts and investors

[4] Hirst et al. (2008) review message and firm characteristics and their effect on market responses to management earnings forecasts. I discuss some of these characteristics in Chapter 3.
[5] Notable exceptions of studies that consider whether manager characteristics matter in investors' assessments of the perceived credibility of management earnings forecasts include Baik et al. (2011) and Yang (2012), which are discussed a bit later in this chapter.

consider senior executives' collective and individual attributes when evaluating management's disclosures.

At the collective manager level, Morningstar analyst investment reports include a category for "Stewardship", in which analysts assign a rating of "Poor", "Standard" or "Exemplary", to the firm's management and board. These reports also include a section where analysts comment on various aspects of management. For example, in a Morningstar analyst note for Avnet Inc, the analyst notes that "Avnet's management seems to be accurate about giving sound guidance, …, management discussions are open and transparent about trends in different regions" (Wahlstrom, 2014a). There is also anecdotal evidence that managers matter to financial regulators. In an OECD report, for example, Koenig (2005) writes: "Business executives appear to have a knack for recognising these trends, and filtering out transitory fluctuations" (p. 250).[6] There is also a sense that management credibility is important to the broader market as analysts' comments about management are often referenced in business reports. For example, in a media note to investors about Mylan Inc., a Credit Suisse analyst is quoted thus: "Management continues to confuse investors in the way it discusses its performance and guidance, which continues to foster a management credibility issue and hurts the stock" (Sabatini, 2008). In the case of Valeant Pharmaceuticals, an analyst is quoted as having "lost confidence in management's ability to understand its own business and to provide reliable guidance" (Lopez, 2016).[7]

Anecdotal evidence that market participants attach credibility to individuals when evaluating management earnings forecasts include the following illustrative examples:

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[6] I thank Professor K. Ramesh for drawing my attention to this quote.
[7] http://www.businessinsider.com.au/nomura-analyst-turns-on-valeant-2016-3?r=US&IR=T

- In a Morningstar stock recommendation for Anglo American, the analyst commented that "… if Carroll and the management team are to blame, it is only that they are overly optimistic forecasters rather than poor project managers" (Rohr, 2014).
- Commenting on the CFO of Blackbaud Inc, the analyst noted that "we like Boor's up-front demeanor and transparency with investors" (Wahlstrom, 2014b).
- Commenting on Fitbit CEO's management earnings forecasts, Cramer on CNBC notes: "James Park should be banned from making any projections …. I think these numbers mean nothing to him. I mean, he cut the guidance for next quarter but then boosted the full-year forecast" (Stevenson, 2016).[8]
- In a media note about Salesforce's CFO changeover, Citigroup analyst noted: "Current CRM CFO had established a history of conservative guidance with excellent disclosure and we hope Hawkins continues this" (Ray, 2014).[9]
- Dichev, Graham, Harvey & Rajgopal (2013), in their study involving a survey and interviews of CFOs, report that one CFO noted, "I think when *people* [emphasis added] are dishonest it is very hard for an analyst with just public information to tell, at least in the short-term" (p. 27).

Overall, it is plausible that the properties of management forecasts may be associated with manager characteristics and that some market participants consider the prior forecast behaviour of individual managers when evaluating the credibility of management earnings forecasts. Two notable prior studies, Baik, Farber & Lee (2011) and Yang (2012) consider managers' characteristics and forecasting track record in relation to the credibility of their management

[8] http://www.cnbc.com/2016/05/05/cramer-elon-musk-getting-away-with-financial-murder.html
[9] http://www.barrons.com/articles/salesforce-names-autodesks-hawkins-new-cfo-1404161016

earnings forecasts. Baik et al. (2011) examine the association between managerial ability and the stock market reaction to the management earnings forecast news. Baik et al. (2011) find that management earnings forecasts issued by higher-ability CEOs elicit a stronger market reaction than those issued by lower-ability CEOs. Yang (2012), finds that when information uncertainty is high, the market is more responsive to management earnings forecasts issued by managers with higher manager-specific forecast accuracy. However, these two studies focus on only two manager attributes (ability and forecast accuracy) and examine management earnings forecasts only in terms of investor reaction.

Despite the evident role of individual managers in the issuance of management earnings forecasts, and media and analysts reports and research evidence that manager-specific factors are associated with various attributes of management earnings forecasts (Bamber et al., 2010), we only have a modest understanding of whether market participants place weight on manager-specific factors in assessing the credibility of management earnings forecasts. In this study, I examine an extensive list of manager traits and assess the perceived credibility of management earnings forecasts using: (1) stock market reaction and (2) consensus analyst forecast revisions. I address this gap in our understanding of how market participants evaluate the credibility of management earnings forecasts by investigating the following research question:

RQ: *Do manager-specific factors affect the perceived credibility of management earnings forecasts?*

To address the research question, I draw on prior research to develop hypotheses focussed on whether manager-specific prior forecast performance and manager attributes matter in relation to the perceived credibility of management earnings forecasts.

First, I predict that the perceived credibility of the current management forecast varies with differences in individual managers' prior forecasting performance. Second, I predict that the perceived credibility of management earnings forecasts varies with differences in managers' non-forecasting attributes. Testing these hypotheses builds on prior studies in several ways.

One of the first studies to examine the effect of individual style or managerial characteristics on organisational outcomes, Bertrand & Schoar (2003), uses a manager-firm matched panel dataset that follows managers across firms and time, and finds that manager-specific effects contribute to investing, financing and organisational practices.[10] More recent studies in accounting have considered idiosyncratic managerial fixed effects on accounting outcomes such as tax avoidance (Dyreng et al., 2010), discretionary accruals (Ge et al., 2011), likelihood of accounting misstatements (Ge et al., 2011), management tone in earnings calls (Davis et al., 2015), and management earnings forecasts (Bamber et al., 2010, Yang, 2012).

Using a manager-firm matched panel dataset to examine manager fixed effects on the characteristics of management earnings forecasts, Bamber et al. (2010) find managerial fixed effects on forecast frequency, forecast specificity, forecast news, forecast bias and forecast accuracy. While Bamber et al. (2010) find that managerial effects are associated with management earnings forecast issuance and forecast characteristics, they do not consider whether these effects influence capital market participants' assessment of the credibility of management earnings forecasts. Prior studies largely have not distinguished between the forecast credibility attributable to the firm versus the manager. A notable exception is Yang (2012), who uses the Bertrand & Schoar (2003) method to extract manager-specific fixed effect

[10] With the Bertrand & Schoar (2003) method, managers are tracked across firms because managers must work at more than one firm so that the manager fixed effects on corporate outcomes can be estimated. This is explained further in Chapter 3.

on forecast accuracy. Yang (2012) then investigates the capital markets responses to managers with higher forecast accuracy and finds that the market responds more strongly to forecasts by managers with higher forecast accuracy. Yang, however, only focuses on one aspect of prior forecast performance: manager-specific forecast accuracy. While accuracy might enhance management's credibility with respect to their management earnings forecasts, evidence suggests that investors and analysts consider other factors in assessing the credibility of management earnings forecasts. This thesis extends Yang in two ways. First, by examining whether investors' responses to management earnings forecast news vary with the manager-specific effect of two other common prior forecast performance measures including forecast frequency and forecast precision. Second, this thesis extends Yang (2012) by examining the effect of manager-specific forecast performance on analysts. Analysts are sophisticated users who can also assess the credibility of managers when considering management earnings forecasts (Baik et al., 2011). Specifically, I examine whether there is an association between manager-specific prior forecast performance and: (1) investor reaction, and (2) consensus analyst forecast revisions.

Prior research examines the effect of manager attributes on corporate outcomes and accounting disclosures.[11] However, little research has focused on whether or not managers' attributes and underlying characteristics affect the perceived credibility of their management earnings forecasts. A notable contribution is Baik et al. (2011), which measures CEO ability, as press citations, manager-specific efficiency as measured by Demerjian et al. (2012a) and industry-adjusted return on assets, and examines whether these moderate stock market reactions to management earnings forecasts. Baik et al. find that stock market reactions to management

[11] See, for example, Adams et al. (2005), Aier et al. (2005), Francis et al. (2008), Bamber et al. (2010), Dyreng et al. (2010), Srinidhi et al. (2011), Demerjian et al. (2012b), Ahmed and Duellman (2013), Benmelech et al. (2015), Davis et al. (2015) and Hamm et al. (2017).

earnings forecast news are stronger for high-ability CEOs than for low-ability CEOs. Social psychology research argues that the degree to which an individual will be influenced by a communicator's message will depend on the individual's beliefs about the perceived credibility (expertise and trustworthiness) of the communicator (Hovland et al., 1953). For example, the degree to which an individual will be persuaded by a communicator's message can depend on how intelligent, knowledgeable, able and sincere the individual perceives the communicator to be (Hovland et al., 1953). However, it is difficult to obtain data about executives' innate ability and attributes. Prior research therefore suggests the use of observable characteristics of the communicator that may be correlated with the communicator's innate ability and psychological traits (Hovland et al., 1953, Hambrick and Mason, 1984, Hambrick, 2007). In this thesis, I integrate the approaches of Yang (2012) and Baik et al. (2011) and examine whether a more comprehensive list of observable managers' attributes are associated with stock market and analyst reaction to management earnings forecasts. Specifically, I examine whether managers' personal, imputed and positional attributes may be correlated with factors investors and analysts consider in assessing the perceived credibility of management. Personal attributes examined include: (1) age, (2) sex, (3), educational background, (4) military experience, and (5) network size. Imputed attributes examined are: (1) managerial ability, (2) number of awards won, and (3) press coverage. Positional attributes of the manager examined include: (1) tenure, (2) manager/chair duality, (3) CEO's CFO experience, and (4) manager's charitable involvement.

1.2 Contribution

This thesis responds to a call by Dichev et al. (2013) to study the "human factor" in assessing

the credibility of disclosures, by moving away from a narrow focus on individual aspects of managers to a broader focus on the effect of manager-specific prior forecast performance as well as manager attributes on the perceived credibility of management earnings forecasts. In doing so, it contributes to the literature by providing a more comprehensive understanding of whether manager-specific factors matter to investors and analysts in their assessments of the credibility of management earnings forecasts.

This thesis also has implications for practice. By providing evidence of whether manager-specific characteristics matter to market participants, this thesis informs managers who wish to better understand the cues investors and analysts use to assess managers. This also informs: (1) firms of potential benefits from having specific managers with specific traits or characteristics, (2) boards about what matters to users which can help boards better monitor managers and, (3) regulators and commentators in providing signals about what matters to users in terms managers' forecasting behaviour and attributes.

1.3 Structure of Thesis

This thesis proceeds as follows. Chapter 2 provides a discussion of related literature and contains the specific hypotheses to be tested. Chapter 3 provides a detailed discussion of the research design. Chapter 4 reports the results. Chapter 5 provides additional analyses. Chapter 6 provides the concluding remarks.

CHAPTER 2 Literature Review and Hypothesis Development

2.1 Introduction

This chapter reviews the literature concerned with management earnings forecasts and the factors associated with the perceived credibility of management earnings forecasts. The review identifies the theoretical foundation necessary for the development of my hypotheses.

2.2 Background

The issuance of management earnings forecasts in the U.S. is largely voluntary. An exception is where managers issue guidance to comply with SEC Rule 10b-5 (Bochner and Clark, 2008). This rule requires managers to either disclose material private information before trading their firm's securities or abstain from trading (Li et al., 2016). Management earnings forecasts are fairly common. Approximately 97% of the S&P 1,500 issued at least one management forecast between 1994-2014 and, between 2009-2014, approximately half of the S&P 1,500 issued at least one management earnings forecast. Issuance of management earnings forecasts has increased over time and is most commonly provided by bigger firms (Anilowski et al., 2007). At the firm level, the provision of management earnings forecasts tends to be 'sticky' because a forecast can create a disclosure precedent whereby the market may interpret future non-disclosure as bad news (Graham et al., 2005, Chen et al., 2011). Management earnings forecasts are now typically bundled with earnings announcements. Rogers and Van Buskirk (2013)

document that bundled management earnings forecasts constituted less than 10% of all management earnings forecasts in 1995 but increased to about 80% by 2007. As discussed in Chapter 3, this bundling practice causes a methodological challenge in separating the market participants' reactions to management earnings forecasts from reactions to earnings announcements.

2.2.1 Potential Negative Consequences of Issuing Management Earnings Forecasts

Critics contend that issuance of management earnings forecasts can encourage managers to emphasise short-term goals at the expense of long-term goals; this view has been expressed by researchers (Fuller and Jensen, 2002, Morgan, 2003), regulators (Levitt, 2000), lobbyists (U.S. Chamber of Commerce, 2007), non-profit organisations (The Aspen Institute, 2016), the media (Zuckerman, 2005, Plitch, 2006) and managers (Sorkin, 2016). The managers of some firms, such as Google (Page, 2004) and Berkshire Hathaway (Belvedere, 2016), have expressed similar concerns and have adopted strong stances against the provision of management earnings forecasts. Mostly, criticism has been focused on the provision of quarterly management earnings forecasts. One of the main arguments against the provision of quarterly management earnings forecasts is that it can lead to 'managerial myopia' moving away focus from long-term goals to short-term ones (Ying Wang and Tan, 2013, Kim et al., 2017). There is some evidence that this can be damaging to firms if they are too focused on meeting or beating their own forecasts (e.g.,Cheng et al., 2005, Acito, 2011, Koch et al., 2012, Call et al., 2014). Cheng et al. (2005), for example, find that firms that frequently issue quarterly management earnings forecasts invest significantly less in R&D than firms that do not

frequently issue quarterly management earnings forecasts.[12] There have been calls for firms to stop providing quarterly management earnings forecasts (e.g., Fuller and Jensen, 2002, Levitt, 2000, Morgan, 2003, Zuckerman, 2005, Plitch, 2006, Hsieh et al., 2006, Nolop, 2012, The Aspen Institute, 2016), and some major companies (e.g. Unilever, Gillette and McDonalds) have ceased providing quarterly guidance or annual guidance (Katz and McIntosh, 2009). Evidence suggests that stopping guidance can worsen the firm's information environment (Houston et al., 2010, Chen et al., 2011).[13] As such, some critics of management earnings forecasts have suggested that companies should move away from quarterly management earnings forecasts towards annual forecasts or disaggregated forecasts (U.S. Chamber of Commerce, 2007, NIRI, 2008, Deloitte, 2009, Lansford et al., 2013, The Aspen Institute, 2016). Houston et al. (2010) find that approximately 86% of firms that ceased to provide quarterly management earnings forecasts between 2002-2005 kept providing annual management earnings forecasts.

2.2.2 Potential Benefits of Issuing Management Earnings Forecasts

Proponents for management earnings forecasts argue that: (1) more information is useful to market participants as it leads to less uncertainty (Janjigian, 2003); and (2) management earnings forecasts are especially useful as a means of correcting market expectations for smaller companies that do not have much analyst coverage (Venkataraman, 2006, Johnson, 2007, Anantharaman and Zhang, 2011). Management earnings forecasts are an important

[12] There is also evidence of benefits associated with issuance of quarterly management earnings forecasts. Firms that provide quarterly management earnings forecasts tend to provide more informative disclosures to the market (Choi et al., 2011) and are associated with less earnings management (Call et al., 2014).
[13] Houston et al. (2010) find that, after stopping, often firms resume providing guidance.

source of market information because they provide a key metric, earnings per share, upon which the market focuses (Graham et al., 2005, Dichev et al., 2013). Beyer et al. (2010), for example, analyse the relative contribution of various disclosures to quarterly stock return variance for the period 1994-2007 and find that management earnings forecasts provide an average of approximately 15% of accounting-based information compared to earnings announcements which provide less than 3% of accounting-based information. Similarly, Ball and Shivakumar (2008) find that, management earnings forecasts issued in 1994-2006 explain relatively more of stock price movements than earnings announcements. Therefore, management earnings forecasts can be an important tool to manage earnings expectations. Several studies find evidence that firms issue management earnings forecasts in order to avoid problems associated with unrealistic earnings expectations (e.g., Ajinkya and Gift, 1984, Hassell and Jennings, 1986, King et al., 1990, Cotter et al., 2006, Seybert and Yang, 2012, Larocque, 2013). Management earnings forecasts can also reduce information asymmetry (e.g.,Coller and Yohn, 1997, Lennox and Park, 2006, Bonsall et al., 2013b, Balakrishnan et al., 2014, Billings et al., 2015, Guay et al., 2016). Coller and Yohn (1997), for example, find that the bid-ask spreads nine days after provision management earnings forecasts are significantly smaller than spreads nine days before management earnings forecasts. Similarly, Guay et al. (2016) find a positive association between financial statement complexity and the frequency of management earnings forecasts, suggesting that managers use management earnings forecasts to help reduce negative effects associated with complex disclosures. Management earnings forecasts may also reduce the magnitude of post-earnings-announcement drift implying that they help to reduce investor under-reaction to earnings announcements (Li and Tse, 2008, Wang, 2008, Zhang, 2012).

2.3 The Perceived Credibility of Management Earnings Forecasts

Agency theory emphasises the risk that managers pursue their self-interest and respond rationally to their personal utility functions (Jensen and Meckling, 1976). As discussed in Section 2.2.2, managers possess private information about the firm and forecasts issued can inform investors and analysts about the expected future earnings of the firm (Graham et al., 2005, NIRI, 2008, Deloitte, 2009, NIRI, 2014). Empirical evidence is consistent with investors using information in the management earnings forecast to adjust their assessments of the firm's value (Penman, 1980, Ajinkya and Gift, 1984, Atiase et al., 2005, Anilowski et al., 2007, Hutton and Stocken, 2007, Ball and Shivakumar, 2008). However, as discussed in Section 2.2.1, the issuance of management earnings forecasts may induce undesirable effects, such as 'managerial myopia'. Also, users of management earnings forecasts cannot perfectly predict the relationship between what managers know and what they actually disclose (Crawford and Sobel, 1982, Benabou and Laroque, 1992, Stocken, 2000, Rogers and Stocken, 2005, Hamm et al., 2012, Bonsall et al., 2013, Goodman et al., 2013). Therefore, the extent to which market participants use a management forecast to adjust their expectations depends on the surprise 'news' element (the difference between the management forecast and existing market expectations) and on the perceived credibility of the forecast (Jennings, 1987, Mercer, 2004, Rogers and Stocken, 2005, Ng et al., 2013). That is, the perceived credibility of the forecast is a component of the usefulness of the management earnings forecast.

The perceived credibility of management earnings forecasts is a concern because of their voluntary non-audited nature, coupled with the PSLR Act 1995 safe harbor provision which protects managers against litigation for unattained forecasts provided the forecasts were issued in 'good faith'. These circumstances, along with the core assumptions of agency theory,

suggest that managers may have incentives and opportunity to strategically use management earnings forecasts for personal gain or to overstate/understate their firm's value (e.g., Frankel et al., 1995, Aboody and Kasznik, 2000, Matsumoto, 2002, Rogers and Stocken, 2005, Cotter et al., 2006, Rogers, 2008, Hafzalla, 2009, Choi et al., 2010, Cheng et al., 2013, Baginski et al., 2016). For example, Frankel et al. (1995), find that managers tend to release good news in their management earnings forecasts to maximize stock prices before raising external finance. Aboody and Kasznik (2000) find that managers with stock-based compensation incentives are more willing to delay good news and precipitate bad news to reduce the strike price of their stock options. Therefore, because management earnings forecasts are unverifiable at the time of announcement, there is potential for intentional bias in the magnitude, precision and timing of the forecast. Managers are constrained however because management earnings forecasts are verified when earnings are announced and because biased forecasts can hurt their reputation (Stocken, 2000). Notwithstanding these constraints, managers can strategically bias the forecasts because they have significant discretion over the forecast disclosed and forecast characteristics, such as forecast precision, timing, tone, horizon and level of disaggregation, (Kothari et al., 2009, Cheng et al., 2013, Huang et al., 2013, Davis et al., 2015). Users of management earnings forecasts therefore cannot discern the asymmetry between what managers know and what they disclose (Crawford and Sobel, 1982, Benabou and Laroque, 1992, Rogers and Stocken, 2005, Hamm et al., 2012, Bonsall et al., 2013a, Goodman et al., 2013). As articulated by Benabou and Laroque (1992):

> *"... private information is typically noisy, so that predictions which turn out to be incorrect can always be ascribed to honest errors. Manipulation will still hurt an insider's reputation, but much more gradually and reversibly, through a process that he can partially control by mixing truth and lies over time to suit his best interests." (p. 921)*

2.4 Factors that may Influence the Perceived Credibility of Management Earnings Forecasts

Mercer (2004) summarises four factors that market participants use in their assessments of the credibility of management disclosures: (1) situational incentives, (2) levels of external and internal assurance, (3) forecast-specific characteristics and (4) management's credibility. In Sections 2.4.1 to 2.4.4, I summarise the situational incentives, assurance, forecast-specific characteristics and management credibility aspects that can influence the credibility of management earnings forecasts. This thesis is focussed on the influence of management credibility on the perceived credibility of management earnings forecasts. In Section 2.4.4, I also briefly discuss how this thesis builds on prior research management credibility of management earnings forecasts.

2.4.1 Situational Incentives

Situational incentives that may affect the perceived credibility of management earnings forecasts are forecast antecedents that "exist at the time the manager decides to issue a forecast" (Hirst et al., 2008). Firm-specific situational characteristics that may be associated with the perceived credibility of management earnings forecasts include litigation risk (Skinner, 1994, Rogers and Stocken, 2005, Ng et al., 2013), financial distress (Frost, 1997, Koch, 2002), and proprietary costs (Bamber and Cheon, 1998, Wang, 2007, Koch and Park, 2011, Ng et al., 2013). For example, investors respond less strongly to management earnings forecasts issued by financially distressed firms because they are aware of potential incentives for financially distressed firms to paint a better picture of their financial health. Manager-specific incentives

are discussed in Section 2.3. Overall, Mercer (2004) argues that market participants are aware that there are incentives surrounding the issuance management earnings forecasts and incorporate these incentives when they react to the forecasts.

2.4.2 Levels of External and Internal Assurance

Prior research argues that the credibility of voluntary reports can be increased if they are verified by independent third parties (Beets and Souther, 1999, Ball et al., 2012). This is consistent with findings of prior studies that suggest that assurance can improve the perceived credibility of voluntary disclosures such as corporate social responsibility disclosures (Pflugrath et al., 2011, Moroney et al., 2012). Because they are forward-looking, management earnings forecasts are generally non-audited. However, Ball et al. (2012) suggest that the perceived credibility of management earnings forecasts can be indirectly enhanced by signalling a commitment for higher quality disclosures through higher levels of audit effort. Making the assumption that managers have some discretion over the level of audit effort, Ball et al. (2012) argue that managers can signal their commitment to more credible management earnings forecasts by seeking higher levels of audit verification (proxied by higher audit fees) of their audited financial statements. Consistent with their argument, Ball et al. (2012) find evidence that the market reaction to the issuance of management earnings forecasts is stronger for firms with higher audit fees.

2.4.3 Forecast Characteristics

Forecast-specific characteristics are the properties of the management forecast chosen by managers. For example, managers can choose the frequency, precision and the timing of their forecasts, or provide different forecast attributions and disaggregated forecasts; the latter are forecasts which include key line items underlying the forecast.[14] Forecast characteristics shown to be associated with the perceived credibility of management earnings forecasts include forecast timing (e.g., Pownall and Waymire, 1989, Pownall et al., 1993), forecast accuracy (e.g., Williams, 1996, Hutton and Stocken, 2007, Zhang, 2012, Ng et al., 2013), forecast frequency (e.g., Hutton and Stocken, 2007), forecast precision (e.g., Bamber and Cheon, 1998, Baginski et al., 1993, Hirst et al., 1999), forecast consistency (e.g., Hilary et al., 2014), forecast attribution (e.g., Baginski et al., 2000, Hutton et al., 2003, Baginski et al., 2004), and forecast disaggregation (e.g., Hirst et al., 2007, Lansford et al., 2013).

2.4.4 Management Credibility

In the neoclassical economics literature concerned with firm behaviour and performance, idiosyncratic manager effects and attributes are ignored. With regards to corporate outcomes, managers are regarded as rational optimisers and homogenous inputs (Weintraub, 1993, Bertrand and Schoar, 2003). That is, even though they may be responsible for corporate choices, these choices are assumed not to be influenced by their individual styles. Following the development of upper echelons theory, studies in the management literature examining the

[14] Measurement of forecast characteristics is further discussed in Chapter 3.

effect manager-specific characteristics on corporate outcomes are emerging (Plöckinger et al., 2016). Upper echelons theory posits that executives' backgrounds, values and personalities affect how they interpret strategic situations and therefore will influence their choices (Hambrick and Mason, 1984, Hambrick, 2007). One of the first empirical studies to examine the influence of manager-specific factors in relation to corporate outcomes is the seminal study by Bertrand and Schoar (2003), which uses a manager-firm matched panel to examine the effect of managers on firm policies. Specifically, they control for firm effects and follow managers across firms and over time to identify managers' fixed effects (commonalities) on corporate outcomes. Overall, they find that manager-specific effects contribute significantly to corporate decisions such as investing and financing practices (e.g. acquisition decisions, dividend policies, cost-cutting policies).

Since Bertrand and Schoar (2003), studies in the accounting literature have adopted upper echelons theory to argue that manager style affects corporate disclosure (e.g., Francis et al., 2008, Bamber et al., 2010, Brochet et al., 2011, Dyreng et al., 2010, Ge et al., 2011, DeJong and Ling, 2013). Ge et al. (2011), for example, use the Bertrand and Schoar method to identify CFO effects on various accounting outcomes (e.g. discretionary accruals, use of operating leases, earnings smoothing, and likelihood of accounting misstatements). Dyreng et al. (2010) use the same method to find that individual executives have a significant effect on corporate tax avoidance a firm undertakes, and Davis et al. (2015) use this method and find that managers have a significant effect on the tone of their earnings conference calls across firms. In the management earnings forecast literature, Brochet et al. (2011) examine executive effects in the issuance of management earnings forecasts and find that following a CEO turnover, if new CEOs are appointed from an external firm and have forecasting experience, they are more likely to increase issuance of management earnings forecasts. Bamber et al. (2010), following

Bertrand and Schoar, use a matched manager-firm panel dataset and find significant manager fixed effects on forecast frequency, forecast specificity, forecast news, forecast bias and forecast accuracy. Therefore, consistent with predictions from the upper echelons theory, prior studies find evidence that manager characteristics can influence their disclosure choices.

Overall, while upper echelons theory predicts that manager characteristics can influence disclosure choices and agency theory predicts the potential for self-serving behaviour, they do not predict whether users of accounting information will discriminate between manager effects and firm effects.

The issue of whether or not the source of information matters is known in social psychology as source credibility (Hovland et al., 1953). Source credibility reflect perceptions of trustworthiness, expertise, goodwill, morality, attractiveness, dynamism, authoritativeness and character (Pornpitakpan, 2004). This literature recognises that source credibility is an important part of the communication process, whereby a receiver evaluates a communicator based on perception the receiver holds of the communicator (McCroskey and Young, 1981). As expressed by Hovland et al. (1953):

> *"An important factor influencing the effectiveness of a communication is the person or group perceived as originating the communication - and the cues provided as to the trustworthiness, intentions, and affiliations of this source". (p. 13)*

In the finance and accounting literature, source credibility is generally conceptualised in two dimensions: competence and trustworthiness (Newell and Goldsmith, 2001). In an accounting context, source credibility has been defined as the degree to which "managers who direct the

preparation of financial statements inspire belief in the statements" (Beaulieu and Rosman, 2003). For example, in the auditing literature, research finds that auditors rely more on information provided by more credible clients (e.g., Beaulieu, 2001, Bhattacharjee et al., 2012). In relation to management earnings forecasts, Mercer (2005) defines managers' reporting credibility as "investors' beliefs about management's trustworthiness and competence in financial disclosure" (p.725).

Social psychology research suggests that the degree to which market participants will be persuaded by a message (management earnings forecasts news) involves a more complex process which includes the message as well as the source (Hovland et al., 1953). As articulated by Metzger et al. (2003): "Message credibility examines how message characteristics impact perceptions of believability, either of the source or of the source's message" (p. 302). Within the context of management earnings forecasts, the degree to which investors and analysts believe the management earnings forecast news is influenced by the perceived credibility of the message as well as the source of the management earnings forecast. The source of the management earnings forecast is both the firm and the manager. In examining the perceived credibility of management earnings forecasts, prior research has largely focused on forecast (message) characteristics and firm (source) characteristics (e.g., Hirst et al., 1999, Mercer, 2005). That is these studies do not distinguish between the credibility associated with the firm and the credibility associated with managers. This deficiency is partly addressed in Yang (2012) and Baik et al. (2011) who examine manager-specific forecast accuracy and managerial ability, respectively. This thesis builds on these two studies and examines management's credibility with respect to their management earnings forecasts by focusing on managers' personal forecasting track records and managers' individual attributes. This is discussed further in the next section.

2.5 Manager-Specific Forecast Performance

Empirical evidence in the management earnings forecast literature is consistent with investors using information in the management earnings forecast to adjust their assessments of the firm's value (Penman, 1980, Ajinkya and Gift, 1984, Atiase et al., 2005, Anilowski et al., 2007, Hutton and Stocken, 2007, Ball and Shivakumar, 2008). As previously discussed, prior studies find that investors' reactions to the management earnings forecast news depend on the perceived credibility of management earnings forecasts. Prior research has examined the effect of prior forecast performance on credibility of management earnings forecasts. Three prior forecast performance measures shown to affect the credibility of management earnings forecasts include forecast accuracy, frequency and precision. As discussed in Section 2.4.4, using the Bertrand and Schoar method allows for the estimation of manager-specific fixed effects on disclosure outcomes including manager-specific prior forecast performance. In this section, I review the relevant literature on prior forecast performance and develop Hypotheses 1 and 2, concerned with manager-specific prior forecast performance.

2.5.1 Management Earnings Forecast Accuracy

One of the main aspects of prior forecast performance studied is forecast accuracy. Indeed, as found by Graham et al. (2005) in their survey of top executives, one of the main reasons managers issue management earnings forecasts is to develop a reputation for accuracy. Examples of studies that examine the relation between forecast accuracy and the credibility of management earnings forecasts are numerous (e.g., Hassell and Jennings, 1986, Hassell et al., 1988, Williams, 1996, Hirst et al., 1999, Hutton and Stocken, 2007, Zhang, 2012, Ng et al.,

2013). These studies use different measures of forecast accuracy and show that, irrespective of how forecast accuracy is computed,[15] market participants respond more to management earnings forecasts of firms with prior forecast accuracy; that is, firms with higher prior forecast accuracy develop a reputation for credible forecasts (Ng et al., 2013). These studies do not however distinguish between the perceived credibility associated with the firm and the perceived credibility associated with managers. This deficiency is partly addressed in Yang (2012), who uses the Bertrand and Schoar (2003) method and tracks managers across firms and over time, to isolate and estimate manager-specific prior forecast accuracy, separate from firm-specific prior forecast accuracy. Yang (2012) finds that, when information uncertainty is high, the market reacts more strongly to management earnings forecast news issued by managers with higher forecast accuracy. However, Yang (2012) examines only one aspect of prior forecast performance. While accuracy might enhance management's credibility with respect to their management earnings forecasts, other evidence suggests that investors and analysts also consider forecast frequency (Hutton and Stocken, 2007) and forecast precision (Choi et al., 2010) in assessing the perceived credibility of management earnings forecasts.

2.5.2 Management Earnings Forecast Frequency

Prior research provides evidence that firms acquire a forecasting reputation only after they have provided accurate forecasts for a substantial period of time (Hutton and Stocken, 2007). Greater forecast frequency is associated with the perceived credibility of management earnings

[15] Most studies compute ex post forecast accuracy by comparing the management forecast against the actual earnings per share and deflating by price (e.g. Baik et al., 2011, Hilary et al., 2014). Other studies use forms of this ex post measure and calculate the average accuracy over a number of periods (e.g. Hutton and Stocken, 2007, Ng et al., 2013) while a few studies compute ex-ante forecast accuracy by predicting forecast accuracy based on past forecast accuracy and firm attributes (Zhang, 2012).

forecasts because it increases the precision with which investors can assess the management earnings forecasts of firms by providing more data points (Trueman, 1986, Hutton and Stocken, 2007, Ying Wang and Tan, 2013). In survey results, Graham et al. (2005) find that managers seem to be aware that the market expects firms to maintain disclosure precedent regardless of whether forecast news is good or bad. However, it can be argued that managers with lower forecasting ability issue more frequent management earnings forecasts to correct their previous forecasts. Forecasting frequency also distinguishes between firms that provide event-generated guidance versus regular management earnings forecasts. This is important because routine guiders may be more likely to spend greater resources in order to build a reputation for credibility (Acito, 2011, Bhojraj et al., 2011, Dambra et al., 2012, Ying Wang and Tan, 2013). On the other hand, management earnings forecasts issued by non-frequent guiders may be event-generated and potentially contain more news than management earnings forecasts issued by frequent guiders (Ball and Shivakumar, 2008). This could lead to a bigger reaction to forecasts issued by infrequent guiders because such forecasts contain more unexpected information.

2.5.3 Management Earnings Forecast Precision

Managers can also choose the precision of their forecasts by issuing point, range, open-ended and qualitative forecasts. A point forecast provides the highest level of precision while a qualitative forecast provides the lowest level of precision. Prior research finds that forecast precision is associated with the perceived credibility of management earnings forecasts and argue that this is because more precise earnings forecasts suggest less management uncertainty (Kim and Verrecchia, 1991, Baginski et al., 1993, Hughes and Pae, 2004, Choi et al., 2010, Du

et al., 2011). This argument reflects the logic that managers will issue more precise forecasts when they are more certain about realising their earnings projections. Research also finds that overconfident managers tend to issue more precise forecasts (Hilary and Hsu, 2011). Managers can, however, strategically vary forecast precision for their self-serving advantage (Hughes and Pae, 2004). For example, managers might issue less precise forecasts when the forecast conveys bad news possibly because they want to dampen reaction to the bad news (Hughes and Pae, 2004) or reduce litigation risk (Choi et al., 2010). Prior studies also find that management earnings forecasts of good news tend to be more precise before insider sales (Cheng et al., 2013). More recently, Hayward and Fitza (2017)provide evidence that, after a setback, managers may increase forecast precision to manage impressions. Therefore, the evidence suggests that managers may increase their forecast precision if they are more certain, overconfident or for self-serving purposes.

2.5.4 Hypothesis 1

As discussed, source credibility research finds that the perceived credibility of the message and the perceived credibility of the source are overlapping (Hovland et al., 1953). As noted by Abelson (1959): "what an audience thinks of a persuader may be directly influenced by what they think of his message" (p. 81). If managers' prior overall forecast performance, as measured by managers' propensity to issue more accurate, frequent and precise forecasts, affects their perceived source credibility and thereby the perceived credibility of their management earnings forecasts, then investors' reaction to management earnings forecast news will be stronger for forecasts issued by managers with higher prior forecast performance. Formally, I hypothesise the following:

Hypothesis 1: Stock price reactions to management earnings forecast news are positively related to manager-specific prior forecasting performance.

2.5.5 Hypothesis 2

Analysts quickly revise their forecasts in response to management earnings forecasts. Research finds that analysts' reactions vary with prior management earnings forecast performance (Waymire, 1986, Jennings, 1987, Hassell et al., 1988, Williams, 1996, Cotter et al., 2006). Management earnings forecasts also influence what analysts include in their definitions of earnings (Christensen et al., 2011). Intuitively, analysts, being sophisticated users, should have a high degree of understanding of managers' incentives and differences between the firm-specific prior forecast performance and manager-specific prior forecast performance. As previously discussed, anecdotal evidence also suggests that analysts place importance on individual managers' forecasting ability.

However, research suggests that individual differences are more likely to matter when complexity and uncertainty is high (Hambrick and Mason, 1984, Plöckinger et al., 2016). In examining the relation between perceived credibility of potential borrowers and lending judgements, for example, Beaulieu (1994) finds that in making loan judgements in the face of negative information, experienced lenders stopped using credibility information while inexperienced lenders used both accounting and credibility information. This would imply that analysts might be less dependent on manager-specific information and more interested in firm-specific information. To this end, I hypothesise the following:

Hypothesis 2: Consensus analyst forecast revisions following management earnings forecast news are associated with manager-specific prior forecasting performance.

2.6 Manager Attributes

Psychology research defines the source's credibility as users' beliefs about the source's expertise and trustworthiness (Hovland et al., 1953). In management earnings forecast research, experimental evidence suggests that investors will find management earnings forecasts issued by less credible sources less useful (Hirst et al., 1999, Mercer, 2004, Mercer, 2005, Cianci and Kaplan, 2010, Chen et al., 2016). Yang (2012) cites Mercer (2005) and alludes to source credibility by suggesting that because "past performance is a signal of the manager's forecasting skill and credibility, market participants should assign greater (less) weight to forecasts issued by managers with higher (lower) prior forecasting accuracy" (p.168). However, as previously discussed, Yang (2012) only examines one aspect of management credibility: accuracy. Yang (2012) does not examine whether attributes of the manager affects their perceived credibility and consequently the perceived credibility of management earnings forecasts.

Using the Bertrand & Schoar (2003) manager-firm matched panel method provides estimates of manager-specific prior forecast performance. Hypotheses 1 and 2 examine whether market participants reactions to management earnings forecasts are associated with managers' individual overall prior forecast performance. However, as noted by Hirst et al. (1999), perceptions of source credibility (expertise and trustworthiness) may not necessarily be

correlated with managers' prior forecast performance because unforeseeable circumstances may lead to otherwise competent executives having low prior forecasting performance. Managers may also have higher prior forecast performance because they have engaged in earnings management (Kasznik, 1999) or strategically biased their management earnings forecasts (Matsumoto, 2002, Rogers, 2008). In addition, it can be argued that the fixed effects estimates obtained using the Bertrand and Schoar method are a design artefact. Hypotheses 3 and 4, examine whether a number of observable characteristics that may convey the perceived expertise and trustworthiness of managers, affect market participants' assessment of the credibility of managers and consequently of management's earnings forecasts.

Prior studies have examined some aspects of the source in relation to accounting choices. For example, Ge et al. (2011) and Dyreng et al. (2010), examine whether different managerial characteristics affect a number of accounting choices. Specifically, Dyreng et al. (2010), examine how age, educational background, sex, manager shareholdings, optimism and overconfidence affect propensities to reduce effective tax rates. Dyreng et al. (2010) find that these common observable characteristics are not strongly associated with propensities to reduce effective tax rates. Ge et al. (2011) find that common observable characteristics explain only a small portion of CFO styles. Similarly, Francis et al. (2008) find that observable characteristics of CEOs can explain a portion of firms' earning quality. One reason for the small explanatory power of executive characteristics in these studies could be because of the relatively non-voluntary nature of disclosures studied. In the management earnings forecasts domain, Bamber et al. (2010) examine several demographic factors and how they relate to management earnings forecast characteristics. They find that managers with finance and accounting backgrounds tend to produce more precise forecasts while those born before WWII and with military experience tend to issue more conservative forecasts.

While prior studies have examined some aspects of the source in relation to management earnings forecasts, they have largely not examined whether observable management characteristics affect market participants' assessment of the credibility of management earnings forecasts. A notable exception of a study that examines an aspect of management's perceived credibility is a study by Baik et al. (2011) that examines the relation between managerial ability and the perceived credibility of management earnings forecasts. Using various measures of managerial ability, Baik et al. find that there is a greater stock market response to management earnings forecasts for firms with higher ability managers. This thesis extends Baik et al. and addresses the possibility that perceptions of management credibility may not necessarily be solely based on management's prior forecast performance by developing Hypotheses 3 and 4. These hypotheses focus on the same issues as Hypotheses 1 and 2 but distinguish between the manager's forecasting track record and observable attributes of the manager.

Investors and analysts may use an array of observable characteristics of managers in evaluating the expertise and trustworthiness of management and thus the believability of their management earnings forecasts. Expertise has been defined as "the extent to which a communicator is perceived to be a source of valid assertions" (Hovland et al., 1953). That is, the extent to which an individual perceives the message source as credible depends on the source's expertise which can refer to the source's qualifications, skills, ability, and experience (Newell and Shemwell, 1995, Metzger et al., 2003, Mercer, 2005). Trustworthiness has been defined as "the degree of confidence in the communicator's intent to communicate the assertions he considers most valid" (Hovland et al., 1953). It is the "willingness of a person B to act favorably towards a person A, when A has placed an implicitly or explicit demand or expectation for action on B" (Ben-Ner and Halldorsson, 2010).

As noted by Hambrick and Mason (1984) and Hambrick (2007), it is difficult to measure or obtain psychometrics data on executives' cognitive and psychological traits. Therefore, they suggest the use of observable characteristics of individuals such as industry and firm tenures, educational backgrounds, and affiliations, that may be correlated with psychological characteristics of the individuals. In Sections 2.6.1 to 2.6.3, I discuss personal, imputed and positional attributes of the manager that may affect their source credibility and thus the perceived credibility of their management earnings forecasts.

2.6.1 Managers' Personal Attributes

Managers' personal attributes examined include: (1) age, (2) sex, (3) educational background, (4) military experience, and (5) network size.

Age can affect perceptions of credibility because it is a sign of broad experience (Hovland et al., 1953). Research in psychology also finds that age can be positively related to perceptions of credibility (Weibel et al., 2008). Prior studies find that age is positively associated with ethical standards (Loe et al., 2000, Peterson et al., 2001), negatively associated with risk-taking behaviour (Serfling, 2014), and that older CEOs are less likely to commit fraud (Troy et al., 2011) and more likely to have higher reporting quality (Huang et al., 2012). If investors and analysts consider older managers to be more credible, this could suggest a positive association between the age of the manager and the reaction to their management earnings forecasts.

Some studies of gender differences in perceived credibility suggest that females are associated

with higher trustworthiness (Newell and Shemwell, 1995, Buchan et al., 2008), higher ethical standards (Loe et al., 2000), higher earnings quality (Krishnan and Parsons, 2008, Srinidhi et al., 2011) and use less positive tone than males in conference calls (Davis et al., 2015). However, other studies find that men are perceived to have higher credibility than women (Weibel et al., 2008, Armstrong and McAdams, 2009). Therefore, the relation between sex and perceptions of source credibility and therefore message credibility of management earnings forecasts is unclear.

Prior literature also finds that education is associated with the perception of expertise (Weisband et al., 1995, Schrand and Zechman, 2012). I therefore examine if the perceived credibility of management's earnings forecasts is influenced by managers' educational background including financial/accounting qualifications, MBA qualification, legal qualification, and Ivy league education. Prior studies find that executives with accounting/financial qualifications are associated with more precise forecasts (Bamber et al., 2010), less risk-taking (Hoitash et al., 2016a), fewer internal control weaknesses (Li et al., 2010) and fewer financial restatements (Aier et al., 2005). and that more educated CEOs seem to engage in less fraud (Troy et al., 2011) but there is debate as to whether MBA degrees signify managerial knowledge (Frydman, 2016) or actually weaken the character of graduates by focusing too much on profits (Pfeffer and Fong, 2004). This is consistent with evidence by Bertrand and Schoar (2003) who find that CEOs with MBAs tend to be more aggressive. Prior studies also provide evidence that CEOs with legal backgrounds tend to be more conservative (Bamber et al., 2010); for example, likely to spend less on R&D (Barker III and Mueller, 2002). I also examine whether graduation from an Ivy league school, which is associated with prestige and academic excellence and can be a proxy for managers' innate ability (Custódio and Metzger, 2014), affects the perceived credibility of management's earnings forecasts. In

summary, education is associated with perceptions of expertise and therefore credibility (Hovland et al., 1953), which suggests a positive association between proxies of education and investors' and analysts' reaction to management earnings forecasts. However, if managers with MBAs are perceived to be more aggressive, a lesser reaction to their management earnings forecasts is expected.

Research finds that executives with military experience are associated with more conservative behaviour (Bamber et al., 2010, Benmelech and Frydman, 2015) and ethical behaviour (Law and Mills, 2017). For example, Bamber et al. (2010) find that executives with military experience tend to issue more conservative and precise forecasts. Market participants might perceive managers with military experience to be more trustworthy because these managers arguably have a sense of duty and honour. However, there is some evidence that executives with military experience are more likely to "passively acquiesce" to illegal activities (Williams et al., 2000). Therefore, the expected association between executives' military experience and the reaction to their management earnings forecasts is unclear.

Managers' social connections may also affect their perceived credibility as social connections can be seen to be valuable (Finkelstein, 1992) because they allow managers access to more resources and can result in better performance (Hochberg et al., 2007, Engelberg et al., 2012) and improved reputation (Mehra et al., 2006). However, there is some evidence that managers who are more socially connected are more protected through coordination and acquiescence and are consequently associated with higher incidence of fraud (Khanna et al., 2015). Therefore, the possible relation between managers' social connectedness and the degree to which their management earnings forecasts are perceived to be credible could be positive or negative.

Overall, there is some evidence that personal attributes of the manager may affect her disclosure quality and that personal attributes may affect perceptions of the expertise and trustworthiness of the manager and consequently of their management earnings forecasts.

2.6.2 Managers' Imputed Attributes

Imputed attributes of the manager, which are manager's attributes that cannot be completely distinguishable from the firm, examined are: (1) managerial ability, (2) number of awards won, and (3) press coverage.

I examine whether managerial ability, as measured by Demerjian et al. (2012a), affects users' perception of the credibility of management earnings forecasts. Demerjian et al. (2012a) use data envelope analysis to obtain a measure of the efficiency with which managers generate revenue.[16] Using this measure, Baik et al. (2011) find that the market response to management forecasts is stronger for those issued by higher ability managers. If managers with higher ability are perceived to be more credible, this would suggest that the reaction to their management earnings forecasts would be higher.

Awards can act as a signal of quality and increase the award-winning manager's perceived credibility (Wade et al., 2006). Koh (2011) finds that firm performance improves after CEOs win awards. Therefore, the number of awards won by the manager may positively affect the

[16] The Demerjian et al. (2012a) measure is explained in more detail in Section 3.5.

perceived credibility of the manager and their disclosures, which would increase the reaction to their management earnings forecasts.

Prior studies argue that more reputed managers are cited more often by the press than less reputable managers and use press citations as a proxy for reputation (Milbourn, 2003, Francis et al., 2008, Baik et al., 2011, Falato et al., 2015). If managers who are considered more reputable are perceived to be more credible, then a stronger reaction to their management earnings forecasts should be observed.

Overall, managers' imputed attributes may convey perceptions of their ability and affect the credibility perceptions of their earnings forecasts.

2.6.3 Managers' Positional Attributes

Positional attributes of the executives examined include: (1) tenure, (2) whether the manager is also the chairperson, (3) whether the CEO had CFO experience, and (3) whether the manager served on a charity.

Tenure has been used as a proxy for the market's perception of the executive's reputation because a longer tenure indicates that the board had more opportunities to observe the executive's performance and that the executive survived the board's evaluations (Milbourn, 2003, Barker III and Mueller, 2002, Jian and Lee, 2011). Executives with longer tenures also are less likely to be career-concerned and have less incentives to bias their management earnings forecasts (Pae et al., 2016). Anecdotal evidence in media reports also suggests that

tenure is important to analysts. For example, a Citigroup analyst notes about a CEO resignation: "Mr. Goldberg had over 15 years tenure with LQ, and was consistently one of the most passionate CEOs in the field; we believe his departure will be viewed as a negative" (Rivas, 2015).[17] If managers with longer tenures are considered to be more credible, then a stronger investor and analyst reaction to their management earnings forecasts should be observed.

Bertrand and Schoar (2003) suggest that managers preferences, risk-aversion and skill levels are likely to matter if they are powerful enough to affect policies. Manager/chair duality is commonly used as a proxy for power because it increases the manager's influence over the board of directors (Krause et al., 2014). However, manager/chair duality can potentially lead to entrenchment because it reduces effective monitoring of the manager. Therefore, the relationship between manager/chair duality and market participants' reaction to management earnings forecasts is unclear.

CFOs are financial experts and prior research finds that CEOs with CFO experience are associated with higher disclosure quality (Matsunaga et al., 2013) and risk-aversion (Hoitash et al., 2016b). Market participants might perceive CEOs with CFO experience to be more credible because such CEOs have expertise as CFOs, who are financial experts. This suggests a stronger reaction to management earnings forecasts by such CEOs.

Finally, managers' charitable involvement can act as a signal of their altruism (Wilson, 2000) and positively affect their perceived credibility (Hwang, 2010) but can also act as a signal that managers want to raise their profile (Littler, 2008). The link between managers' charitable

[17] http://blogs.barrons.com/stockstowatchtoday/2015/12/22/steelcase-plunges-20-as-q3-disappoints-guidance-misses-estimates/

involvement and the perceived credibility of managers and consequently of their disclosures is therefore unclear.

Overall, there is evidence that managers' previous positions can affect the way they may be perceived and arguably the perceptions of credibility of their management earnings forecasts..

2.6.4 Hypotheses 3 and 4

In summary, there is evidence that managers' personal, imputed and positional attributes may affect their disclosure choices and quality, as well as the way they are perceived. Observable managers' personal, imputed and positional attributes may also be correlated with managers' cognitive and psychological traits and innate ability. Therefore, I argue that managers' attributes may be associated with investors' and analysts' assessments of the perceived trustworthiness and expertise of managers and consequently of managements' earnings forecasts. Therefore, I hypothesise the following:

Hypothesis 3: Stock price reactions to management earnings forecasts are moderated by managers' attributes.

Hypothesis 4: Consensus analyst forecast revisions following management earnings forecasts are moderated by managers' attributes.

2.7 Conclusion

Previous studies provide evidence that the perceived credibility of management earnings forecasts is associated with firm-specific and firm forecast-specific characteristics. This chapter extends this idea to consider the relevance of individual managers as the source of the forecasts, and to formulate questions regarding whether the perceived credibility of management earnings forecasts varies with manager-specific characteristics. This chapter develops hypotheses based on arguments regarding the potential influence of manager-specific forecast performance and managers' attributes on the perceived credibility of management earnings forecasts (summarised in Table 1). The next chapter describes the research method used to test these hypotheses.

Table 1 Summary of hypotheses

H1	Stock price reactions to management earnings forecast news are positively related to manager-specific prior forecasting performance.
H2	Consensus analyst forecast revisions following management earnings forecast news are associated with manager-specific prior forecasting performance.
H3	Stock price reactions to management earnings forecasts are moderated by managers' attributes.
H4	Consensus analyst forecast revisions following management earnings forecasts are moderated by managers' attributes.

CHAPTER 3 Research Method

3.1 Introduction

This chapter describes the research design used to test the hypotheses. A manager-firm matched panel data set, which follows managers across firms, is required to estimate manager fixed effects and firm fixed effects on prior forecast performance. Section 3.2 describes the procedure used to construct the manager-firm matched panel. Section 3.3 describes the sample selection process. Section 3.4 describes the model used to test Hypotheses 1 and 2. Section 3.5 describes the model used to test Hypotheses 3 and 4. Section 3.6 concludes the chapter with the descriptive statistics of the managerial attributes present in the sample.

3.2 Constructing a Manager-Firm Matched Panel and Estimating Manager and Firm Fixed Effects

If managers work at only one firm, the manager fixed effects on prior forecast performance cannot be reliably distinguished from the firm fixed effects on prior forecast performance. A manager-firm matched panel based on the Bertrand and Schoar (2003) method is therefore constructed for the purpose of estimating manager and firm fixed effects.[18] Under this method, the manager fixed effects on prior forecast performance are separated from the firm fixed effects on forecast performance. To distinguish manager effects from those of the employing firm, the method requires managers to have worked at more than one firm. Following Yang

[18] The importance of the contribution of Bertrand and Schoar (2003) is discussed in Section 2.5.

(2012), there are no minimum requirements imposed for the length of time a manager has to work at a particular firm. The sample construction process to obtain the manager-firm matched panel is described in Section 3.2.1 and the model used to estimate manager fixed effects is explained in Section 3.2.2 below.

3.2.1 Panel Construction

The process used to construct the manager-firm matched panel is characterised in Figure 1. Figure 1 indicates that Manager A worked at X Inc from 1998 to 2001 and at Y Inc from 2002 to 2004, while Manager B worked only at Y Inc from 2005 to 2009. Following studies using manager-firm matched panels (e.g. Bamber et al., 2010, Ge et al., 2011, Yang, 2012), observations with available data to estimate firm-specific effects are also retained, in addition to observations for firms where there is sufficient data to estimate manager-specific effects. These observations are referred to as 'filler' years in prior studies (Ge et al., 2011). These 'filler' years are retained because firms need to have had more than one manager to enable the estimation of firm fixed effects. 'Filler' year observations are not included in the Hypothesis (market and analyst reaction) tests because manager fixed effects are not estimable for those observations.

Figure 1 Example of sample construction process

96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13
		Manager A							Manager B								
Filler	Filler	X Inc	X Inc	X Inc	X Inc	Filler	Filler	Filler	Filler	Filler	Filler	Filler	Filler	Filler	Filler	Filler	Filler
Filler	Filler	Filler	Filler	Filler	Filler	Y Inc	Y Inc	Y Inc	Y Inc	Y Inc	Y Inc	Y Inc	Y Inc	Filler	Filler	Filler	Filler

Manager A's fixed effect on forecast performance is measured after controlling for the fixed effect of each employing firm (X Inc and Y Inc), year fixed effects and other controls which

are discussed in Section 3.2.2 below. Manager A's fixed effects capture the commonalities in Manager A's prior forecast performance across two firms. It is not possible to estimate the fixed effects of Manager B because they are fully subsumed by the fixed effects of Y Inc and the cross-sectional year fixed effects.

3.2.2 Estimating Manager and Firm Fixed Effects on Prior Forecast Performance

To obtain manager and firm fixed effects on prior forecast performance, which are then used to test the hypotheses, I follow Bamber et al. (2010) and Yang (2012) by estimating the following model:

$$Y_{it} = \mu + \sum \gamma_m MGR_m + \sum \lambda_i FIRM_i + \sum \beta_t YEAR_t + \sum \alpha_k X_{kit} + \varepsilon \quad (1)$$

Where

Dependent Variable: Y_{it} is the prior forecast performance measure for firm *i* in year *t*. I use three forecast performance measures to estimate manager-specific forecast performance: (1) forecast accuracy, (2) forecast frequency and (3) forecast width (precision). Table 2 summarises the prior forecast performance measures used.

Table 2 Prior forecast performance measures

ACCURACY	=	absolute difference between the management earnings forecasts and actual earnings multiplied by -1 and scaled by beginning of period price.
FREQUENCY	=	number of management earnings forecasts issued in year.
WIDTH	=	absolute difference between the upper bound and the lower bound of the management earnings forecast multiplied by -1 and scaled by beginning of period price.

Following Yang (2012), forecast accuracy is measured as the absolute difference between the management forecast and actual earnings, multiplied by -1 and scaled by beginning of period stock price. The midpoint of the forecast is used if the management earnings forecast is a range forecast. Forecast frequency is the number of management earnings forecasts issued by the firm during the year. Forecast precision (width of the range) is measured as the absolute difference between the upper bound and the lower bound of the management earnings forecast, multiplied by -1 and scaled by beginning of period stock price (Goodman et al., 2013).[19] Point forecasts have a precision measure of zero. The forecast precision (accuracy) measure is multiplied by -1 so that it is increasing-in-quality precision (accuracy) measure.

Variables of Interest: MGR is an indicator variable that uniquely identifies each manager. The manager fixed effects used in subsequent analyses are the vectors of γ obtained for each of the three measures of prior forecast performance. FIRM is an indicator variable for each firm in the model. The firm fixed effects used in subsequent analyses are the vectors of λ obtained for each of the three measures of prior forecast performance.[20]

Control Variables: YEAR is an indicator variable for each year in the model. Similar to Yang (2012), X is a vector of control variables (summarised in Table 3) that are expected to be associated with prior management earnings forecast performance.[21]

[19] Width of the range is highly correlated with forecast accuracy (see Chapter 4). Therefore, results using a categorical measure of forecast precision are also provided in additional analyses. Following Bamber et al. (2010) this categorical forecast precision measure is coded as 3 for point forecasts, 2 for range forecasts and 1 for open-ended forecasts.
[20] The manager and firm fixed effects variables used to test the hypotheses are summarised in Table 5 below.
[21] For convenience, a summary of all variables used in this thesis is also provided in Appendix A.

Table 3 Control variables

ANNUAL	=	an indicator variable coded as 1 for annual forecasts, and 0 otherwise.
F_HORIZON	=	the number of days between the management earnings forecast date and the end of the fiscal period, divided by 365.
SIZE	=	the natural logarithm of total assets at beginning of period.
F_LOSS	=	an indicator variable coded as 1 if the management forecast predicted a loss, and 0 otherwise.
ROA	=	return on assets calculated as firm i's net income in year t divided by lagged total assets.
ANALYSTS	=	the natural logarithm of number of analysts following the firm.
EARNVOL	=	the standard deviation of earnings per share for the prior four periods.
MTB	=	the market-to-book value at beginning of period.
CONC	=	Herfindahl index using revenues of firms sharing the same four-digit SIC code.
R&D	=	R&D expense scaled by total assets.
LITRISK	=	an indicator variable coded as 1 if firm is in a high-litigation industry.
RESTRUCT	=	an indicator variable coded as 1 if firm is engaged in restructuring during the year, and 0 otherwise.
ACQ	=	an indicator variable coded as 1 if firm has an M&A during the year, and 0 otherwise.
INST	=	percentage of firm's common stock held by institutional investors.
OUTDIR	=	percentage of directors on the board that are also not officers of the firm.

Managers issue management earnings forecasts with periodicity ranging from quarterly to annual. Following Yang (2012), because both annual and quarterly management earnings forecasts are included in Model (1) to estimate fixed effects, ANNUAL is an indicator variable coded as one and zero otherwise to control for forecast periodicity. Before 2002, quarterly management earnings forecasts were issued more frequently (Anilowski et al., 2007). As discussed in Section 2.2.1, possibly after criticism about the potential for short-termism associated with the issuance of quarterly management earnings forecasts, annual management earnings forecasts are issued more frequently (Anilowski et al., 2007). Annual forecasts might also be issued more frequently if managers have to amend their forecasts (Tang et al., 2016). Annual management earnings forecasts also tend to have longer horizons than quarterly management earnings forecasts (Hutton and Stocken, 2007). Most annual management earnings forecasts are issued between one quarter ahead to five quarters ahead while most quarterly management earnings forecasts are issued between one to two quarters ahead (Rogers and Van Buskirk, 2013).

Longer horizon management earnings forecasts tend to be less accurate (Johnson et al., 2001,

Hutton and Stocken, 2007, Feng and McVay, 2010, Yang, 2012, Zhang, 2012) and less precise (Bamber and Cheon, 1998, Choi et al., 2010, Feng and McVay, 2010, Cheng et al., 2013). This is because, closer to the end of the fiscal period, managers are likely to have more certainty and it is more difficult for them to explain away forecast errors (Baginski and Hassell, 1997, Hutton and Stocken, 2007). Therefore, I also control for forecast horizon (F_HORIZON) which is measured as the number of days between the management earnings forecast issuance date and the end of the fiscal period, divided by 365.

SIZE is included because larger firms have access to greater resources, which may enable them to issue management earnings forecasts more accurately, frequently and with greater precision. Firm size can also proxy for the amount of public information. Prior studies find that larger firms tend to have higher forecast accuracy (Ajinkya et al., 2005, Baik et al., 2011, Yang, 2012, Zhang, 2012), frequency (Kasznik and Lev, 1995, Ajinkya et al., 2005, Brochet et al., 2011) and precision (Choi et al., 2010, Cheng et al., 2013).

Prior studies argue that it is more difficult for managers to forecast earnings for loss firms, which leads to less accurate forecasts (Ajinkya et al., 2005, Rogers and Stocken, 2005, Hutton and Stocken, 2007, Feng and McVay, 2010, Yang, 2012, Cheng et al., 2013). One cited reason is because loss firms are potentially more likely to have unusual items (Rogers and Stocken, 2005). Brown (2001), finds evidence consistent with this argument, where managers who report profits are more likely to beat analyst forecast consensus than managers who report losses. Therefore, an indicator variable for predicted loss (F_LOSS), equal to one if the management earnings forecast is negative and zero otherwise, is included to control for difficulty in forecasting for loss firms. Prior research also provides evidence that managers from financially distressed firms may have more incentives to provide inaccurate disclosures

because distressed firms have less to lose (Koch, 2002). Prior research also finds that, because of the forecast difficulty and uncertainty surrounding loss firms, managers who predict losses tend to issue less precise forecasts (Ajinkya et al., 2005, Rogers and Stocken, 2005, Cheng et al., 2013) and tend to issue forecasts less frequently (Ajinkya et al., 2005, Bhojraj et al., 2011, Tang et al., 2016).

Return on assets (ROA) is included to control for the firm's operating performance because prior studies find that performance is positively associated management earnings forecast frequency (Miller, 2002, Cotter et al., 2006, Bhojraj et al., 2011), forecast accuracy (Fang, 2009, Bamber et al., 2010, Yang, 2012, Hui and Matsunaga, 2015) and forecast precision (Bamber and Cheon, 1998).

I control for analyst following (ANALYSTS) as prior research finds that there is a positive association between number of analysts following the firm and management earnings forecast frequency (Lang and Lundholm, 1996, Ajinkya et al., 2005, Feng et al., 2009, Lee et al., 2012), accuracy (Baik et al., 2011, Hui and Matsunaga, 2015) and precision (Baginski and Hassell, 1997, Choi et al., 2010). This is because the higher the analyst following, the higher the reputational costs for misleading guidance (Hansen and Noe, 1999).

I also control for earnings volatility (EARNVOL), measured by the standard deviation of earnings per share over the prior four years, because it proxies for ex-ante uncertainty (Lennox and Park, 2006). Prior studies find that firms with higher earnings volatility tend to issue management earnings forecasts less frequently (Waymire, 1985, Kross et al., 1994, Ajinkya et al., 2005, Brochet et al., 2011, Kim, 2016). This is because higher earnings volatility implies less certainty which can lead to managers being less willing to issue forecasts because they are

likely not to meet or beat their own projections. Prior studies also find that, because of high uncertainty, earnings volatility is negatively associated with management earnings forecast accuracy (Feng et al., 2009, Ajinkya et al., 2005, Yang, 2012) and forecast precision (Choi et al., 2010, Cheng et al., 2013) but positively associated with management earnings forecast frequency, possibly to clarify market expectations (Waymire, 1985, Billings et al., 2015).

Proprietary costs associated with disclosure of voluntary information can lead to firms sacrificing the release of accurate, frequent or precise disclosures to protect their competitive advantage (Verrecchia, 1983). On the other hand, it has been argued that proprietary costs can proxy for credibility because the information revealed in the forecasts is costly (Gigler, 1994). Market-to-book value (MTB), product-market concentration (CONC), and research & development intensity (R&D) are included as proxies for the proprietary costs associated with voluntary disclosure.[22] Prior studies argue that firms with higher market-to-book values (growth firms), higher product-market concentration and higher R&D intensity have more proprietary costs because such firms have more to lose if they reveal their competitive information (King et al., 1990, Bamber and Cheon, 1998, Ng et al., 2013). In examining the association between the three different proxies and prior forecast performance, mixed results are obtained. Bamber and Cheon (1998) do not find a significant association between market-to-book and forecast precision. Similarly, using market-to-book value as a proxy for proprietary costs, Ajinkya et al. (2005) do not find an association between proprietary costs and forecast accuracy, frequency or precision and, Hutton and Stocken (2007) do not find a significant association between market-to-book value and forecast accuracy. However, Choi (2010) finds a positive association between market-to-book value and forecast precision and

[22] As seen in Table 12 in Chapter 4, the three different proxies for proprietary costs are not highly correlated.

Yang (2012) finds a negative association between market-to-book value and forecast accuracy while Zhang (2012) finds a positive association between market-to-book value and forecast accuracy. Using product-market concentration ratios, some prior studies do not find significant associations with forecast performance measures (Ajinkya et al., 2005, Choi et al., 2010) while some find a negative association between proprietary costs and management forecast precision (Bamber and Cheon, 1998) and forecast accuracy (Rogers and Stocken, 2005, Yang, 2012), and a positive association between proprietary costs and forecast frequency (Baik et al., 2011). Using R&D intensity as a proxy for proprietary costs, Wang (2007) finds a negative association between proprietary costs and forecast frequency, and Wang (2007) and Hui and Matsunaga (2015) find a negative association between proprietary costs and forecast accuracy. However, Yang (2012) finds a positive association between R&D intensity and forecast accuracy. Overall, evidence using the three different proxies for proprietary costs is mixed. However, all three proxies are included to be consistent with prior research (Bamber et al., 2010, Yang, 2012, Ng et al., 2013).

Litigation risk (LITRISK) may affect a firm's voluntary disclosure because the fear of litigation can result in better forecast performance (Rogers and Stocken, 2005, Wang, 2007, Bamber et al., 2010, Choi et al., 2010, Baik et al., 2011). Some prior studies find a positive association between litigation risk and forecast frequency (Brown et al., 2005, Wang, 2007, Cao and Narayanamoorthy, 2011, Lee et al., 2012) and a negative association between litigation risk and forecast precision (Bamber and Cheon, 1998, Brown et al., 2005) and accuracy (Baik et al., 2011). Other studies do not find a significant association between litigation risk and forecast frequency (Baik et al., 2011), and accuracy (Ajinkya et al., 2005, Zhang, 2012, Yang, 2012). While the results are mixed, I still control for litigation risk through a dummy variable that indicates whether a firm is in a high litigation industry (biotechnology, computers, electronics,

retailing and R&D service) and suffered a 20% or greater decrease in earnings (Wang, 2007, Bamber et al., 2010, Yang, 2012).

Following Bamber et al. (2010) and Yang (2012), I control for the incidence of restructuring (RESTRUCT) or M&A (ACQ) during the year to account for difficulty in forecasting for such firms because they are likely to experience more uncertainty and have more special items (Williams, 1996, Brochet et al., 2011). As such these firms may have less frequent, accurate and precise forecasts. Yang (2012) does not find a significant association between RESTRUCT/ACQ and forecast accuracy. However, some prior studies find a negative association between the presence of restructuring events and forecast frequency (Feng et al., 2009) and accuracy (Feng et al., 2009).

Prior studies argue that firms with better governance mechanisms are likely to have better forecast performance (Ajinkya et al., 2005, Karamanou and Vafeas, 2005). Prior studies find that firms with higher institutional ownership and greater number of outside directors issue more frequent (Ajinkya et al., 2005, Karamanou and Vafeas, 2005, Baik et al., 2011, Lee et al., 2012), accurate (Ajinkya et al., 2005, Yang, 2012) and precise management earnings forecasts (Bamber and Cheon, 1998, Ajinkya et al., 2005, Cheng et al., 2013). I therefore control for institutional ownership (INST) and the percentage of outsiders (OUTDIR) on the board of directors. Data for these variables are obtained from Thomson 13F, Institutional Shareholder Services and BoardEx.

3.3 Data and Sample Selection

The sample selection process is summarised in Table 4. Consistent with prior research (Hutton

and Stocken, 2007, Bamber et al., 2010, Yang, 2012), the initial sample is comprised of all U.S.-listed firms in Execucomp for the post-PSLR Act period 1996 to 2014. As mentioned in Chapter 1, the PSLR Act was enacted in 1995 to reduce class action litigations and reinforced the safe harbor that protects managers from litigation with respect to unattained forecasts (Johnson et al., 2001).

Table 4 Sample selection

Sample (1996-2014)	Number of Executives	Number of Observations
Strict CEO/CFO transfers in Execucomp (Worked for at least two firms)	1,159	
Management Earnings Forecast Data available in Zacks	351	10,304
Data available for control variables from Compustat, CRSP, Thomson 13F, RiskMetrics, BoardEx, Zacks, and IBES	338	7,168
Panel A: Sample used to test Hypotheses 1 and 2 (Yang 2012 estimation period)		
Managers whose fixed effects are estimable during 1996-2005 (Yang 2012 estimation period)	240	2,517
Managers whose fixed effects are estimable during 1996-2005 and also provide forecasts during period 2006-2009 (Yang 2012 estimation period)	103	1,547
Panel B: Sample used to test Hypotheses 1 and 2 (Extending estimation periods)		
Managers whose fixed effects are estimable during 1996-2013 (Extending estimation periods)	276	5,708
Managers whose fixed-effects are estimable during 1996-2013 (Extending estimation periods) and included market reaction tests (2006-2014)	237	4,202
Managers whose fixed-effects are estimable during 1996-2013 (Extending estimation periods) and included in analyst forecast revision tests (2006-2014)	236	4,052
Panel C: Sample used to test Hypotheses 3 and 4 (Extending estimation periods)		
Data available for all manager attributes and included in market reaction tests (2006-2014)	160	2,691
Data available for all manager attributes and included in analyst forecast revision tests (2006-2014)	158	2,612

To construct the manager-firm matched panel used to estimate manager fixed effects on prior forecast performance, managers who were a CEO or a CFO in more than one firm during the study period were tracked across firms. Both CEO and CFO positions are included in the sample, but not other executives, because CEOs and CFOs usually share the primary responsibility for the management earnings forecasts and investor relations (Tulimieri and Banai, 2010, Dichev et al., 2013, Bertrand, 2009, Frank and Goyal, 2007). Therefore, both the

CEO and CFO are more likely than other insiders to influence credibility perceptions of management earnings forecasts (Bamber et al., 2010, Brochet et al., 2011, Yang, 2012). CEOs are identified by the variable 'ceoann' and CFOs were identified by the variable 'cfoann' in Execucomp. In addition, following Ge et al. 2011 and Dejong and Ling 2013, by searching variables 'titles' and 'titleann' for "CFO", "Chief Financial Officer", "Chief Finance Officer", "Chief Accounting Officer", and variations of "VP finance". Data about executive turnovers were also merged in from AuditAnalytics and BoardEx to supplement Execucomp's turnover data. This resulted in 1,159 managers who worked as CEO or CFO for at least two firms.

Management earnings forecasts data were obtained from Zacks Investment Research (Zacks). The Zacks database uses their own unique identifier for each firm: Zacks Master Company Identification Code (ZID). Execucomp's unique company identifier (GVKEY) and Zacks' (ZID) were merged by using CUSIP, historical CUSIPs, the company ticker and name, and the WRDS lookup tool. 99.6% of sample firms in Execucomp firms were matched to Zacks. This resulted in a sample of 10,304 observations with 351 managers who worked for more than one firm and provided management earnings forecasts in more than one firm. Yang (2012) obtains 713 managers and 11,171 observations for 1996-2009 using First Call CIG data, which has higher coverage than Zacks; I did not have access to First Call data.[23]

Data for control variables from Compustat, CRSP, Thomson 13F, Institutional Shareholder Services (RiskMetrics) and BoardEx were then merged which led to a sample of 338 managers and 7,168 observations. For comparability with Yang (2012), I initially restrict my estimation period to 1996-2005 to estimate manager and firm fixed effects (Table 4 Panel A). This results

[23] A summary of Zacks versus First Call coverage is provided in Appendix B.

in 240 managers with 2,517 observations for the estimation period 1996-2005. In comparison, the sample in Yang (2012) includes 402 managers and 6,491 observations for the same estimation period. Of the 240 managers, whose fixed effects are estimable, 103 also provided management earnings forecasts during the period 2006-2009 and are included in the market reaction tests. Yang (2012) obtains 172 managers with 2,051 observations at this stage.

My sample period is 1996-2014, which is longer than in Yang (2012) 1996-2009 study period. It is likely that managers' and firms' forecasting performance more likely changes over a longer period. Therefore, I also use extending estimation periods to estimate managers' fixed effects, in which the estimation period starts in 1996 (or the year the manager enters the sample) and ends a year before the year the management earnings forecasts were issued (Table 4 Panel B). For example, for a manager present in 1996, the fixed effects estimation period for management earnings forecasts issued in 2013 is 1996-2012, while the estimation period for management earnings forecasts issued in 2014 is 1996-2013. Thus, there are 9 notional estimation periods; the first estimation period is 1996-2005 and the last estimation period is1996-2013. This results in 276 managers who have worked and issued management earnings forecasts at more than one firm between 1996-2013 and 5,708 observations. Of those 276 managers, 237 managers also issue forecasts during the test period 2006-2014 and are included in the market reaction tests. Data for analyst forecast consensus from Zacks is then merged which results in 236 managers and 4,052 observations for analyst forecast revision tests.

Executives' personal, imputed and positional attributes were then merged in from Compustat, Institutional Shareholder Services (RiskMetrics), BoardEx, and Factiva (Table 4 Panel C). This resulted in 160 managers and 2,691 observations with data available for all manager attributes included in the market reaction tests and 158 managers and 2,612 observations included in analyst forecast revision tests.

Following the methods used in prior research, the resulting sample is small compared to the population of listed companies. The results must ultimately be considered in relation to the sample with available data. The sample also includes relatively larger companies compared to the population of listed companies because of the need for data from Execucomp, BoardEx and management earnings forecasts. This is discussed further in Section 3.6.1.

3.4 Research Design for Testing Hypotheses 1 and 2

As discussed in Chapter 2, management forecast credibility is defined as "investors' beliefs about management's trustworthiness and competence in financial disclosure" (Mercer, 2005). Following prior studies, I operationalise investors' beliefs as the extent of investors' reaction to the current management earnings forecast (Rogers and Stocken, 2005, Hilary and Hsu, 2011, Yang, 2012) and analysts' reaction to the current management forecast (Jennings, 1987, Williams, 1996).

I follow Yang (2012) and use the quartile ranks of firm fixed effects (RANK_FE_FIRM) and quartile ranks of manager-specific estimates (RANK_FE_MGR) for the three prior forecast performance measures (ACCURACY, FREQUENCY, and WIDTH) obtained from Model (1).[24] Following Yang (2012), quartile ranks are used for ease of interpretation. Managers in the top quartile (quartile 4) are the highest performers and managers in the bottom quartile (quartile 1) are the worst performers. These variables are summarised in Table 5.

[24] A list of variable definitions is available in Appendix A.

Table 5 Manager and firm fixed effects variables

FE_FIRM_ACCU	=	Firm fixed effect coefficient estimated from regressing ACCURACY on firm-, manager-, and year-specific fixed effects (From Model 1).
FE_FIRM_FREQ	=	Firm fixed effect coefficient estimated from regressing FREQUENCY on firm-, manager-, and year-specific fixed effects (From Model 1).
FE_FIRM_WIDTH	=	Firm fixed effect coefficient estimated from regressing WIDTH on firm-, manager-, and year-specific fixed effects (From Model 1).
FE_MGR_ACCU	=	Manager fixed effect coefficient estimated from regressing firm-year ACCURACY on firm-, manager-, and year-specific fixed effects (From Model 1).
FE_MGR_FREQ	=	Manager fixed effect coefficient estimated from regressing FREQUENCY on firm-, manager-, and year-specific fixed effects (From Model 1).
FE_MGR_WIDTH	=	Manager fixed effect coefficient estimated from regressing WIDTH on firm-, manager-, and year-specific fixed effects (From Model 1).
RANK_FE_FIRM_ACCU	=	Quartile rank of variable FE_FIRM_ACCU.
RANK_FE_FIRM_FREQ	=	Quartile rank of variable FE_FIRM_FREQ.
RANK_FE_FIRM_WIDTH	=	Quartile rank of variable FE_FIRM_WIDTH.
RANK_FE_MGR_ACCU	=	Quartile rank of variable FE_MGR_ACCU.
RANK_FE_MGR_FREQ	=	Quartile rank of variable FE_MGR_FREQ.
RANK_FE_MGR_WIDTH	=	Quartile rank of variable FE_MGR_WIDTH.

Hypothesis 1 predicts a positive association between managers' prior forecast performance and the market reaction to management earnings forecasts news. To test Hypothesis 1, the following model is estimated on the sample of management earnings forecasts issued during 2006-2014:

$$\begin{aligned} CAR(-1,1) = \mu &+ \mu_1 NEWS_{it} + \mu_2 RANK\_FE\_MGR\_ACCU_m + \mu_3 RANK\_FE\_MGR\_ACCU_m \times NEWS_{it} \\ &+ \mu_4 RANK\_FE\_MGR\_FREQ_m + \mu_5 RANK\_FE\_MGR\_FREQ_m \times NEWS_{it} \\ &+ \mu_6 RANK\_FE\_MGR\_WIDTH_m + \mu_7 RANK\_FE\_MGR\_WIDTH_m \times NEWS_{it} + \\ &+ \mu_8 RANK\_FE\_FIRM\_ACCU_i + \mu_9 RANK\_FE\_FIRM\_ACCU_i \times NEWS_{it} \\ &+ \mu_{10} RANK\_FE\_FIRM\_FREQ_i + \mu_{11} RANK\_FE\_FIRM\_FREQ_i \times NEWS_{it} \\ &+ \mu_{12} RANK\_FE\_FIRM\_WIDTH_i + \mu_{13} RANK\_FE\_FIRM\_WIDTH_i \times NEWS_i \\ &+ \mu_{14} F\_LOSS_{it} + \mu_{15} F\_LOSS_{it} \times NEWS_{it} + \mu_{16} ROA_{it} + \mu_{17} ROA_{it} \times NEWS_{it} \\ &+ \mu_{18} SIZE_{it} + \mu_{19} SIZE_{it} \times NEWS_{it} + \mu_{20} HORIZON_{it} + \mu_{21} HORIZON_{it} \times NEWS_{it} \\ &+ \sum \mu_t YEAR_t + \varepsilon_{it} \end{aligned} \quad (2)$$

CAR(-1,+1) is the sum of market-adjusted returns around the management earnings forecast

issuance date using CRSP value-weighted index[25] (Williams, 1996, Seybert and Yang, 2012, Yang, 2012). [26]

Hypothesis 2 predicts an association between managers' prior forecast performance and the analyst reaction to management earnings forecasts news. To test Hypothesis 2, the association between managers' prior forecasting performance and management earnings forecast credibility with analysts, the following model is estimated on the sample of management earnings forecasts issued during 2006-2014:

$$\begin{aligned} AFREV_{it} = \beta &+ \beta_1 NEWS_{it} + \beta_2 RANK\_FE\_MGR\_ACCU_m + \beta_3 RANK\_FE\_MGR\_ACCU_m \times NEWS_{it} \\ &+ \beta_4 RANK\_FE\_MGR\_FREQ_m + \beta_5 RANK\_FE\_MGR\_FREQ_m \times NEWS_{it} \\ &+ \beta_6 RANK\_FE\_MGR\_WIDTH_m + \beta_7 RANK\_FE\_MGR\_WIDTH_m \times NEWS_{it} \\ &+ \beta_8 RANK\_FE\_FIRM\_ACCU_i + \beta_9 RANK\_FE\_FIRM\_ACCU_i \times NEWS_{it} \\ &+ \beta_{10} RANK\_FE\_FIRM\_FREQ_i + \beta_{11} RANK\_FE\_FIRM\_FREQ_i \times NEWS_{it} \\ &+ \beta_{12} RANK\_FE\_FIRM\_WIDTH_i \times NEWS_{it} + \beta_{13} RANK\_FE\_FIRM\_WIDTH_i \times NEWS_{it} \\ &+ \beta_{14} F\_LOSS_{it} + \beta_{15} F\_LOSS_{it} \times NEWS_{it} + \beta_{16} ROA_{it} + \beta_{17} ROA_{it} \times NEWS_{it} \\ &+ \beta_{18} SIZE_{it} + \beta_{19} SIZE_{it} \times NEWS_{it} + \beta_{20} HORIZON_{it} + \beta_{21} HORIZON_{it} \times NEWS_{it} \\ &+ \sum_t YEAR_t + \varepsilon_{it} \end{aligned} \quad (3)$$

$AFREV_{it}$ is the difference between the mean analyst forecast consensus within 10 days after the management earnings forecast date and the mean analyst forecast up to 90 days before the management earnings forecast date, scaled by beginning of period stock price (Hilary et al., 2014).

The extent to which market participants react to management forecasts depends on the amount

[25] The value-weighted index (VWRETD) is calculated by CRSP using all issues listed on NYSE, NASDAQ, and ARCA, excluding American Depository Receipts (CRSP, 2014).
[26] If stock returns capture cross-sectional differences in discount rates and transaction costs, this could bias inferences about manager and firm effects on change in earnings expectations (Yeung, 2009). To potentially capture this, earnings volatility and market-to-book value are included as controls in Model 1.

of news provided by the forecast (Jennings, 1987, Rogers and Stocken, 2005, Chang et al., 2008). Therefore, I include forecast news (NEWS) which is measured as the difference between the management forecast and prevailing analyst consensus forecast,[27] divided by beginning of period stock price (Hutton and Stocken 2007). For management earnings forecasts bundled with earnings announcements, this news measure is adjusted by using the Rogers and Van Buskirk (2013) approach to estimate a conditional news measure where a conditional analysts forecast revision is calculated which is then compared against the forecast to obtain the adjusted forecast news.[28] All other variables are defined in Table 3 and Table 5 above.

I also include an indicator variable equal to one if the firm predicted a loss (F_LOSS) for the period forecasted (Atiase et al., 2005, Hutton and Stocken, 2007, Baik et al., 2011, Yang, 2012, Tang et al., 2016). This is because loss firms may be perceived to have lower disclosure credibility (Frost, 1997, Koch, 2002). However, loss firms provide less frequent management earnings forecasts and therefore the reaction to the news conveyed in the forecasts they do provide can be higher (Tang et al., 2016). Consistent with this argument, some studies find a positive association between forecast news by firms predicting losses and the reaction to management earnings forecasts (Hutton and Stocken, 2007, Yang, 2012, Tang et al., 2016). Atiase et al. (2005) and Baik et al. (2011) find no significant association between the news conveyed by firms that predict losses and the reaction to management earnings forecasts.

As discussed in Section 3.2.2, prior research finds that superior performance is associated with higher disclosure quality (Miller, 2002). Following Yang (2012), beginning-of-period return on assets (ROA) is included to control for prior performance because Yang finds that the

[27] The prevailing analyst consensus forecast is the most recent mean consensus forecast up to 90 days before the issuance of the management earnings forecast.
[28] Details of this adjustment are provided in Appendix C.

reaction to forecast news is stronger for firms with higher prior performance.

I include in the model the natural log of total assets (SIZE) to control for size effects in the response to management earnings forecasts. This is because market participants' reaction to earnings news provided by larger firms is potentially smaller because larger firms have more pre-disclosure information and therefore a lower amount of unexpected information (Atiase, 1985). Prior studies find evidence consistent with this argument and find a negative association between size and reaction to management earnings forecasts (Atiase et al., 2005, Hutton and Stocken, 2007). However, Yang (2012) suggests that the reaction to management earnings forecasts is stronger for bigger firms and finds evidence consistent with this suggestion.

Forecast horizon (F_HORIZON) is included because forecasts issued closer to the end of the fiscal year (shorter horizon forecasts) may be less informative because of more competing information (less uncertainty). In other words, longer horizon forecasts are potentially more useful because they are likely to contain more information (Baginski et al., 2016). However, prior research also finds that longer horizon forecasts are more likely to be less accurate and therefore less credible (Baginski and Hassell, 1997). Another argument is that market participants are less likely to assess the credibility of management earnings forecasts that are issued closer to the end of the fiscal year because it is more difficult for managers to explain away forecast errors (Hutton and Stocken, 2007). Prior studies find a negative association between forecast horizon and reaction to the forecast (Hutton and Stocken, 2007, Baik et al., 2011, Yang, 2012). Therefore, I control for forecast horizon which is equal to the number of days between the issuance of the management earnings forecast and the end of the fiscal period, divided by 365 (Bamber and Cheon, 1998, Yang, 2012).

3.5 Research Design for Testing Hypotheses 3 and 4

Hypotheses 3 and 4 predict that the market reaction and analyst reaction to management earnings forecasts, respectively, will be conditioned by managers' attributes. Manager attributes (M_ATTRIBUTES) are summarised in Table 6.

To test Hypotheses 3 and 4, the following model will be estimated on a vector of manager attributes (M_ATTRIBUTES), first one attribute at a time, and then with all attributes included:

$$
\begin{aligned}
RESPONSE_{i,t} = \phi &+ \sum \phi_m M\_ATTRIBUTES_m + \phi_1 NEWS_{it} + \phi_2 RANK\_FE\_MGR\_ACCU_m \\
&+ \phi_3 RANK\_FE\_MGR\_WIDTH_m + \phi_4 RANK\_FE\_MGR\_FREQ_m \\
&+ \phi_5 RANK\_FE\_MGR\_ACCU_m \times NEWS_{it} + \phi_6 RANK\_FE\_MGR\_WIDTH_m \times NEWS_{it} \\
&+ \phi_7 RANK\_FE\_MGR\_FREQ_m \times NEWS_{it} + \phi_8 RANK\_FE\_FIRM\_ACCU_i \\
&+ \phi_9 RANK\_FE\_FIRM\_WIDTH_i + \phi_{10} RANK\_FE\_FIRM\_FREQ_i \\
&+ \phi_{11} RANK\_FE\_FIRM\_ACCU_i \times NEWS_{it} + \phi_{12} RANK\_FE\_FIRM\_WIDTH_i \times NEWS_{it} \\
&+ \phi_{13} RANK\_FE\_MGR\_FREQ_i \times NEWS_{it} + \phi_{14} F\_LOSS_{it} + \phi_{15} F\_LOSS_{it} \times NEWS_{it} \\
&+ \phi_{16} ROA_{it} + \phi_{17} ROA_{it} \times NEWS_{it} + \phi_{18} SIZE_{it} + \phi_{19} SIZE_{it} \times NEWS_{it} \\
&+ \phi_{20} HORIZON_{it} + \phi_{21} HORIZON_{it} \times NEWS_{it} \\
&+ \sum_t YEAR_t + \varepsilon_{it}
\end{aligned}
\tag{4}
$$

$RESPONSE_{i,t}$ is CAR (-1, +1) as in Model 2 to test Hypothesis 3 and AFREV as in Model 3 to test Hypothesis 4. Variables for manager attributes are summarised in Table 6. All other variables are as defined in the previous sections.

As discussed in Chapter 2, it is difficult to obtain psychometrics data on managers' cognitive

and psychological traits. Therefore, prior research recommends using observable characteristics which may be correlated with executives' cognitive and psychological traits (Hambrick, 2007). I examine whether the perceived credibility of management earnings forecasts vary with observable personal, imputed and positional attributes of the manager.[29]

Table 6 Manager attributes

Personal attributes		
AGE	=	the natural logarithm of the manager's age.
SEX	=	an indicator variable coded as 1 if the manager is a female, and 0 otherwise.
FIN_EXP	=	an indicator variable coded as 1 if the manager has an accounting/finance degree or professional accounting/finance qualification, and 0 otherwise.
MBA	=	an indicator variable coded as 1 if the manager has an MBA qualification, and 0 otherwise.
LEGAL	=	an indicator variable coded as 1 if the manager has a law degree, and 0 otherwise.
IVY	=	an indicator variable coded as 1 if the manager graduated from an Ivy League school, and 0 otherwise.
MIL_EXPER	=	an indicator variable coded as 1 if the manager has military experience, and 0 otherwise.
NETWORK	=	the natural logarithm of the executive's number of connections
Imputed attributes		
M_ABILITY	=	managerial ability, as obtained from Demerjian et al. (2012).
PRESS_COV	=	the number of press citations for manager over a five-year period prior to the issuance of the management earnings forecast.
AWARDS	=	the total number of awards won as at the beginning of year.
Positional attributes		
TENURE	=	the total number of years of experience in the current position and firm at the beginning of the year.
MGR_CHAIR	=	an indicator variable coded as 1 if the manager chairs the board during the year.
CEO_CFO_EXPER	=	an indicator variable coded as 1 if the CEO has CFO experience, and 0 otherwise.
CHARITY	=	an indicator variable coded as 1 if the manager serves on the board of a charity during the year.

Personal attributes of the manager examined are age, sex, network size, financial expertise, legal expertise, MBA education, Ivy league education, military experience. Data for personal attributes were obtained from Execucomp, BoardEx and AuditAnalytics.[30] AGE is the natural

[29] These attributes were explained in Section 2.6. I explain the variables again, in this section, for completeness.
[30] BoardEx assigns a unique ID to each manager (Director ID). This was matched to Execucomp's unique manager ID (ExecID) through merging by company identifiers and the manager's first name and last name and cross

log of the executive's age. As previously discussed, age is examined because it can affect the perceived credibility of forecast news because the managers' age can be used as a signal for general experience (Hovland et al., 1953). SEX is an indicator variable equal to one if the executive is female (Bamber et al., 2010, Davis et al., 2015). Prior studies find some evidence that gender can be a factor which affects perceptions of credibility (Newell and Shemwell, 1995, Buchan et al., 2008). Financial expertise and education, are examined because they can signal a higher level of expertise (Li et al., 2010, Custódio and Metzger, 2014). Financial expertise (FIN_EXP) is an indicator variable equal to one if the manager has an accounting/finance degree or professional accounting/finance qualification, and zero otherwise (Bamber et al., 2010, Davis et al., 2015). MBA is an indicator variable equal to one if the manager has an MBA qualification, and zero otherwise (Bamber et al., 2010, Choi et al., 2010, Custódio and Metzger, 2014, Davis et al., 2015). LEGAL is an indicator variable coded as one if the manager has a law degree, and zero otherwise (Bamber et al., 2010, Custódio and Metzger, 2014, Davis et al., 2015). It is examined because prior studies find that managers with a legal background tend to be more conservative (Bamber et al., 2010, Custódio and Metzger, 2014, Davis et al., 2015). IVY is an indicator variable equal to one if the manager went to an Ivy league university, and zero otherwise (Custódio and Metzger, 2014). It is examined because Ivy league education can convey academic excellence and competence. NETWORK is the natural logarithm of the executive's number of overlaps through employment, education and social activities as calculated by BoardEx. Managers' social connections are examined because they can indicate managers' resourcefulness (Hochberg et al., 2007, Engelberg et al., 2012).

checking the executive's middle name, appointment year or exit year. Next, I matched using the manager's full name only if BoardEx had a record of the manager's full name working at a different firm but no record of the corresponding Execucomp firm. For those cases, to ensure that a true match was obtained, I performed Google searches to check that the manager indeed worked at both firms. This resulted in 93% of Execucomp's ExecID being matched to BoardEx's Director ID.

Imputed attributes examined are managerial ability, press coverage and number of awards won. Managerial ability (M_ABILITY) is the 2015 Demerjian et al. (2012a) score obtained from their website.[31] This score proxies for managers' efficiency in generating revenue[32]. Press coverage (PRESS_COV) is measured using the total number of press articles with the manager's name over the five years preceding the issuance of the management earnings forecast. The number of press citations for each manager was obtained from Factiva and was hand collected from The New York Times, The Wall Street Journal, Fortune magazine, Financial Times, Bloomberg Businessweek and Forbes (Francis et al., 2008, Baik et al., 2011).[33] AWARDS is the number of awards won by the executive as at the beginning of the year of the release of the management earnings forecast obtained from BoardEx. The number of awards won by an executive can signal their ability (Koh, 2011). Overall, three proxies for ability can affect the perceived credibility of the managers and therefore result in a stronger reaction to their management earnings forecasts.

Positional attributes of the manager examined are tenure in the current firm, manager/chair duality, CEO's CFO experience and charity involvement. Prior research argues that tenure can be a proxy for manager reputation because longer tenured managers have survived many board evaluations (Milbourn, 2003). Therefore, I examine whether tenure is associated with the perceived credibility of management earnings forecasts. TENURE is measured as the number of years the manager was employed at the firm at the beginning of the year. The appointment

[31] http://faculty.washington.edu/pdemerj/data.html

[32] Demerjian et al (2012) obtain this score by first using data envelope analysis to estimate firm-efficiency on revenue-generating resources namely cost of inventory, SG&A expenses, fixed assets, operating leases, past R&D expenditures and intangible assets. Demerjian et al. then regress this firm level efficiency measure against firm characteristics. The residual from that regression is the proxy for managerial ability measure used in this thesis.

[33] For the sake of completeness, the executive's full name including their middle name and common names were searched. The lists of hits were than manually checked to ensure that the mentions pertained to the correct person.

dates of managers were obtained from Execucomp, AuditAnalytics and BoardEx. I also examine whether manager/chair duality can affect the perceived credibility of management earnings forecasts. This is because prior research argues that managers who are also chairperson are more powerful and therefore have more influence over the firm's policies including its disclosures (Krause et al., 2014). Manager/chair (MGR_CHAIR) duality is an indicator variable equal to one if the manager chairs the board during the year, and zero otherwise. Data for manager/chair duality was obtained from Institutional Shareholder Services (RiskMetrics) and BoardEx. CEO's CFO experience (CEO_CFO_EXPER) is an indicator variable equal to one if the CEO has CFO experience at the beginning of the year, and zero otherwise (Matsunaga et al., 2013). I tracked CEOs across firms in Execucomp and BoardEx to determine whether they had CFO experience. This variable is examined because research finds that CEOs with CFO experience have financial expertise and are more likely to be associated with an increase in disclosure quality (Aier et al., 2005, Matsunaga et al., 2013, Custódio and Metzger, 2014, Hoitash et al., 2016a). Finally, I examine whether the manager's involvement in a charity affects the perceived credibility of their management earnings forecast. Charitable involvement (CHARITY) is an indicator variable equal to one if the manager serves on the board of a charity during the year (Davis et al., 2015).[34] This is because prior research finds that charitable involvement can signal altruism (Littler, 2008).

3.6 Descriptive Statistics

This section provides some descriptive statistics for the distributions of the variables. Section

[34] Data for whether a manager was involved in a charity was obtained from BoardEx.

3.6.1 describes the sample when the Yang (2012) 1996-2009 study period is used. Section 3.6.2 describes the full sample when extending estimation periods are used to estimate manager fixed effects on prior forecast performance. Section 3.6.3 provides the descriptive statistics for the manager attributes. Descriptive statistics for manager and firm fixed effects are reported in Chapter 4.

3.6.1 Descriptive Statistics using Yang (2012) Study Period

In order to compare the sample to prior research, I initially report the descriptive statistics for the underlying variables for the period 1996-2009 in Table 7. This consists of the same estimation sample 1996-2005 and test period of 2006-2009 of Yang (2012). All continuous control variables are winsorized at the bottom and top one percent to mitigate the potential impact on the results of extreme values. The sample when the Yang (2012) period of 1996-2009 is used consists of 240 managers and 2,517 observations. The descriptive statistics are mostly consistent with prior studies using the manager-firm matched panel method (Yang, 2012, Bamber et al., 2010). The average return on assets is about 6.7%, the number of analyst following is about 9.4, the mean level of institutional ownership is 76.4% and the mean level of outside directorship on the board is 91.3%. The average firm issues about 6.8 management earnings forecasts during the sample period. The average forecast is issued about 140 days before the end of the fiscal period end (0.394 × 365 days), with error of about -1.1% of price.

The distributions of the variables are generally similar to Yang (2012). However, one notable difference is that the Yang (2012) sample has 13.5% firms predicting losses, compared to about 4.3% in Table 7. This might be because Yang (2012) uses First Call management earnings

Table 7 Descriptive statistics for the period 1996-2009 (Based on Yang (2012) study period)

Variable	Mean	1%	25%	Median	75%	99%	MIN	MAX	STD DEV
CAR	-0.005	-0.291	-0.040	0.000	0.039	0.201	-0.624	0.568	0.086
SIZE	7.959	4.969	6.887	7.768	8.986	11.425	4.066	12.467	1.539
F_LOSS	0.043	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.204
ROA	0.067	-0.205	0.031	0.065	0.106	0.310	-0.205	0.332	0.078
INST	0.764	0.320	0.663	0.777	0.880	1.121	0.022	1.753	0.167
ANALYSTS	9.440	1.000	5.000	8.000	14.000	24.000	0.000	30.000	5.793
HORIZON	0.394	0.008	0.167	0.205	0.658	1.438	0.003	3.126	0.343
EARNVOL	0.496	0.071	0.240	0.390	0.627	2.120	0.013	4.320	0.413
ANNUAL	0.515	0.000	0.000	1.000	1.000	1.000	0.000	1.000	0.500
OUTDIR	0.913	0.600	0.857	0.917	1.000	1.000	0.400	1.000	0.098
MTB	3.393	-0.417	1.782	2.675	3.955	20.094	-0.417	20.094	2.968
CONC	0.043	0.019	0.031	0.040	0.049	0.132	0.016	0.309	0.021
LITRISK	0.125	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.330
RESTRUCT	0.411	0.000	0.000	0.000	1.000	1.000	0.000	1.000	0.492
ACQ	0.094	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.292
R&D	0.029	0.000	0.000	0.003	0.042	0.202	0.000	0.329	0.046
FREQUENCY	6.751	1.000	4.000	6.000	9.000	24.000	1.000	33.000	4.634
WIDTH	-0.003	-0.020	-0.002	-0.001	0.000	0.000	-1.680	0.000	0.022
ACCURACY	-0.011	-0.144	-0.007	-0.004	-0.001	0.000	-4.003	0.000	0.072
RAW_F_NEWS	-0.002	-0.037	-0.002	0.000	0.001	0.020	-0.751	0.771	0.019
F_NEWS	0.001	-0.114	-0.004	0.000	0.007	0.092	-0.793	0.771	0.037

This table provides the descriptive statistics for 103 managers and 1,547 observations (1996-2009). This sample is obtained by using the Yang (2012) sample period. Variable definitions are provided in Appendix A.

forecast data which covers more firms as compared to Zacks, especially in the earlier estimation periods, which are used to estimate fixed effects.[35] One potential implication for this difference in coverage is that this sample is more representative of larger firms than Yang (2012). This could work against finding significant effects because manager-specific effects are expected to decline with size (Bertrand and Schoar, 2003, Bamber et al., 2010). Consistent with findings by Rogers and Van Buskirk (2013), after adjusting for bundled forecasts, the average management earnings forecast is a good news forecast (0.001) as opposed to the raw unadjusted news measure (RAW_F_NEWS) which is on average a bad news forecast (-0.002).[36]

3.6.2 Descriptive Statistics using Extending Estimation Periods

Table 8 reports the descriptive statistics for the period 1996-2014 using the extending estimation periods to estimate the fixed effects of managers on management forecasting performance. All continuous control variables are winsorized at the bottom and top one percent to mitigate the potential impact on the results of extreme values. As previously mentioned, there are 9 estimation periods, the first estimation period being 1996-2005 and extending by a year at a time, leading to the last estimation period which is 1996-2013. Using extending estimation periods, fixed effects for 276 managers with 5,708 observations were estimable (see Table 4). Of those 276 managers who provided management earnings forecasts during the estimation periods, 237 also provided management earnings forecasts during the test period (2006-2014) and are included in market reaction tests while 236 are included in analyst forecast revision tests. For all the variables in Table 8, the number of executives included in this sample is 237 with 4,202 observations except for the analyst forecast revision variable which includes 236 managers with 4,052 observations.

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[35] See Appendix B for a comparison between First Call and Zacks coverage.
[36] See Appendix C for details about the Rogers and Van Buskirk (2013) adjustment for bundled forecasts.

Table 8 Descriptive statistics for the period 1996-2014 using extending estimation periods (Used to test Hypotheses 1 and 2)

Variable	Mean	1%	25%	Median	75%	99%	MIN	MAX	STD DEV
CAR	0.000	-0.223	-0.034	0.001	0.036	0.186	-0.517	0.568	0.074
AFREV	-0.001	-0.022	-0.001	0.000	0.001	0.013	-0.078	0.047	0.006
SIZE	8.649	5.598	7.532	8.563	9.697	11.651	4.588	12.240	1.485
LOSS	0.022	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.145
ROA	0.069	-0.191	0.031	0.066	0.105	0.266	-0.205	0.332	0.071
INST	0.808	0.429	0.721	0.809	0.900	1.113	0.000	1.452	0.143
ANALYSTS	12.214	2.000	8.000	12.000	16.000	27.000	1.000	36.000	5.867
HORIZON	0.450	0.030	0.178	0.400	0.690	1.195	0.003	2.490	0.330
EARNVOL	0.532	0.050	0.275	0.425	0.677	2.052	0.024	4.188	0.415
ANNUAL	0.666	0.000	0.000	1.000	1.000	1.000	0.000	1.000	0.472
OUTDIR	0.947	0.750	0.900	1.000	1.000	1.000	0.571	1.000	0.067
MTB	3.192	0.494	1.699	2.555	3.702	20.094	-0.417	20.094	2.878
CONC	0.040	0.019	0.030	0.037	0.045	0.093	0.016	0.143	0.015
LITRISK	0.098	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.297
RESTRUCT	0.513	0.000	0.000	1.000	1.000	1.000	0.000	1.000	0.500
ACQ	0.066	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.248
R&D	0.024	0.000	0.000	0.001	0.038	0.151	0.000	0.221	0.037
FREQUENCY	6.806	1.000	4.000	6.000	8.000	18.000	1.000	19.000	3.262
WIDTH	-0.003	-0.019	-0.004	-0.002	-0.001	0.000	-0.157	0.000	0.006
ACCURACY	-0.009	-0.133	-0.007	-0.003	-0.001	0.000	-0.750	0.000	0.028
RAW_F_NEWS	-0.002	-0.033	-0.002	0.000	0.001	0.017	-0.479	0.107	0.019
F_NEWS	-0.002	-0.106	-0.008	0.000	0.006	0.093	-0.433	0.341	0.034

This table provides the descriptive statistics for firm and forecast for the period 1996-2014 for 237 managers and 4,202 observations for each variable except for AFREV which includes 236 managers and 4,052 observations. This sample is obtained by using extending estimation periods with the first estimation period commencing on 1996-2005 and ending on 1996-2013. Variable definitions are provided in Appendix A.

On average, sample firms issue 6.8 management earnings forecasts. The average forecast is a range forecast with an error of about 1% of price and issued about 164 days before the end of the fiscal period. The average ROA is about 6.9%, firms with predicted losses are about 2.2% of the sample and about 6.6% of firm-years had an acquisition or merger during the sample period. The average level of institutional ownership during the sample period is 80.8% and the average level of outside directors on the board is 94.7%. The average raw management earnings forecast news (RAW_F_NEWS) and the adjusted forecast news (F_NEWS) have similar means and medians. Overall, the distributions are generally similar to Table 7. Some differences are size and number of analyst following which is higher when extending estimation periods are used. The percentage of firms predicting losses falls from 4.3% to 2.2%. This could imply that the sample is biased towards larger firms. As discussed previously, this would work against finding results for manager fixed effects because manager fixed effects is expected to decline with firm size (Bertrand and Schoar, 2003, Bamber et al., 2010).

3.6.3 Descriptive Statistics for Managerial Attributes

Table 9 Panel A reports the descriptive statistics for managerial attributes over the period 1996-2014. These managerial attributes are included to test Hypotheses 3 and 4. Panel B reports the descriptive statistics for the other variables included in the models. All continuous variables except for the dependent variables and managerial attributes are winsorised at the bottom and top one percent to mitigate the impact on the results of extreme values. This sample is comprised of managers who have provided management earnings forecasts in more than one firm and for which data for all managerial attributes are available. The sample includes 160 managers and 2,691 observations, except for the variable AFREV which consists of 158 managers and 2,612 observations.

Table 9 Panel A: Descriptive statistics for manager attributes (Used to test Hypotheses 3 and 4)

Variable	Mean	1%	25%	Median	75%	99%	MIN	MAX	STD DEV
SEX	0.057	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.232
AGE	54.154	42.000	50.000	54.000	58.000	68.000	40.000	72.000	5.930
FIN_EXP	0.372	0.000	0.000	0.000	1.000	1.000	0.000	1.000	0.484
MBA	0.533	0.000	0.000	1.000	1.000	1.000	0.000	1.000	0.499
LEGAL	0.058	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.234
IVY	0.235	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.424
MIL_EXPER	0.085	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.279
NETWORK	6.683	4.762	6.109	6.652	7.275	8.599	4.543	8.599	0.847
M_ABILITY	0.026	-0.203	-0.062	-0.015	0.076	0.542	-0.275	0.594	0.146
PRESS_COV	33.296	0.000	1.000	2.000	11.000	654.000	0.000	902.000	114.103
AWARDS	0.449	0.000	0.000	0.000	0.000	10.000	0.000	10.000	1.545
TENURE	4.532	0.159	1.885	3.751	6.504	15.260	0.079	18.263	3.279
MGR_CHAIR	0.263	0.000	0.000	0.000	1.000	1.000	0.000	1.000	0.440
CEO_CFO_EXPER	0.228	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.420
CHARITY	0.011	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.105

This table provides the descriptive statistics for managerial attributes, firm and forecast characteristics for the period 1996-2014 for 160 managers and 2,691 observations. This sample is the sample for which data for all managerial attributes are available. Variable definitions are provided in Appendix A.

Table 9 Panel B: Descriptive statistics for firm and forecast characteristics (Used to test Hypotheses 3 and 4)

Variable	Mean	1%	25%	Median	75%	99%	MIN	MAX	STD DEV
CAR	0.002	-0.214	-0.034	0.003	0.039	0.189	-0.402	0.412	0.071
AFREV	-0.001	-0.022	-0.001	0.000	0.001	0.012	-0.078	0.047	0.006
SIZE	8.701	5.739	7.596	8.678	9.642	11.706	5.317	12.240	1.414
LOSS	0.023	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.151
ROA	0.075	-0.191	0.043	0.076	0.112	0.253	-0.205	0.332	0.072
INST	0.819	0.489	0.738	0.807	0.905	1.121	0.382	1.189	0.125
ANALYSTS	12.844	2.000	8.000	13.000	17.000	28.000	1.000	36.000	5.940
HORIZON	0.432	0.027	0.178	0.285	0.685	1.181	0.003	2.490	0.318
EARNVOL	0.525	0.049	0.289	0.440	0.680	1.643	0.031	4.188	0.387
ANNUAL	0.637	0.000	0.000	1.000	1.000	1.000	0.000	1.000	0.481
OUTDIR	0.951	0.750	0.900	1.000	1.000	1.000	0.571	1.000	0.067
MTB	3.459	-0.417	1.882	2.820	3.844	20.094	-0.417	20.094	3.034
CONC	0.038	0.019	0.029	0.036	0.043	0.072	0.016	0.143	0.013
LITRISK	0.113	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.317
RESTRUCT	0.570	0.000	0.000	1.000	1.000	1.000	0.000	1.000	0.495
ACQ	0.057	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.232
R&D	0.031	0.000	0.000	0.018	0.045	0.147	0.000	0.221	0.039
FREQUENCY	7.061	2.000	4.000	7.000	9.000	19.000	1.000	19.000	3.407
WIDTH	0.003	-0.019	-0.004	-0.002	-0.001	0.000	-0.157	0.000	0.006
ACCURACY	-0.010	-0.153	-0.007	-0.003	-0.002	0.000	-0.750	0.000	0.031
RAW_F_NEWS	-0.002	-0.040	-0.002	0.000	0.001	0.017	-0.479	0.107	0.022
F_NEWS	-0.002	-0.113	-0.008	-0.001	0.006	0.091	-0.433	0.341	0.033

This table provides the descriptive statistics for managerial attributes, firm and forecast characteristics for the period 1996-2014 for 160 managers and 2,691 observations. This sample is the sample for which data for all managerial attributes are available. Variable definitions are provided in Appendix A.

About 5.7% of the sample is female and the average age of a manager is 54 which is consistent with Davis et al (2015), who use a manager-firm matched sample to study tone across managers, find that 6% of their sample are female and the average age of the manager is 51. Approximately 37.2% of managers in the sample have an accounting/finance accounting degree or qualification, 53.3% have an MBA degree, 23.5% graduated from an Ivy league university and 22.8% of CEOs have CFO experience. The average managerial ability (M_ABILITY) score is 0.026. About 5.8% of managers have a law degree and 8.5% of managers have military experience, which is similar to what Bamber et al. (2010) obtain. The average tenure for a sample manager is about 4.5 years and about 26.3% of the sample's managers also serve as the chairperson. About 1.1% of sample managers have charity experience. An average manager in the sample has about 812 network connections. The mean number of press citations over five years is 33 while the median is 2 which indicates that press citations is positively skewed. The average number of awards won by a manager is 0.4 and the median is 0. Firm and forecast characteristics (Panel B) are, in general, comparable to those in Table 8.

3.7 Conclusion

Overall, this chapter documents the research design used in this thesis. The attributes for this sample is compared to the sample attributes for similar prior studies. The variable values and distributions are mostly consistent with prior research and the sample is assessed as reliable to proceed to testing the hypotheses. The results are reported in the next chapter.

CHAPTER 4 Results

4.1 Introduction

This chapter reports and interprets the estimations of manager fixed effects and the results for my four hypotheses tests. Hypotheses 1 predicts a positive association between manager-specific prior forecast performance and market reaction to management earnings forecast news while Hypothesis 2 predicts an association between manager-specific prior forecast performance and analyst reaction to management earnings forecast news. Hypotheses 3 and 4 predict that investors' and analysts' reactions to management earnings forecasts, respectively, is moderated by managerial attributes. Section 4.2 provides the descriptive statistics for the fixed effects estimated using Model 1. Section 4.3 reports the correlations between variables. Sections 4.4.1 and 4.4.2 provide the results when the Yang (2012) study period is used. Section 4.4.3 presents the results for Hypothesis 1. Section 4.5 provides the results for Hypothesis 2. Section 4.6 provides the results for Hypothesis 3 and Section 4.7 reports the results for Hypothesis 4. Section 4.8 concludes this chapter.

4.2 Estimation of Manager and Firm Fixed Effects

To obtain manager and firm fixed effects, Model 1 is estimated on forecast accuracy, forecast frequency and forecast precision. In addition, I estimate fixed effects using: (1) the Yang (2012) study period, and (2) extending estimation periods, as discussed in Chapter 3. Table 10 describes the distributions of the manager and firm fixed effect coefficients on accuracy when

the model is estimated for the Yang (2012) time periods. Panel A provides the descriptive statistics for manager and firm fixed effects on accuracy for the Yang (2012) estimation period (1996-2005). The estimation period includes 240 managers and 2,517 observations. For the estimation sample, the manager fixed effects coefficients on accuracy (FE_MGR_ACCU) are lower than Yang (2012) and firm fixed effects coefficients on accuracy (FE_FIRM_ACCU) are comparable with Yang (2012), who estimates the coefficients for 402 managers and 679 firms as compared to the sample's 240 managers and 414 firms. As noted in Section 3.3, this is because, Yang (2012) uses First Call data for management earnings forecasts, which has higher coverage than Zacks. The mean of the manager fixed effects on accuracy for the estimation period is 0.004 compared to Yang's 0.016 and the median on manager fixed effects on accuracy is 0.003 compared to Yang's 0.017. The mean firm fixed effects on accuracy for the estimation period is -0.021 compared to Yang's which is -0.027 and the median obtained is -0.024 compared to Yang's -0.020. Yang (2012) does not report the standard deviation of the fixed effect estimations. The interquartile range for manager fixed effects this sample is 0.024, which is comparable to Yang's interquartile range of 0.020. However, the interquartile range for firm fixed effects in the sample is 0.137, which is higher than Yang's interquartile range of 0.047, which suggests higher variability in the sample's firm fixed effects.

Table 10 Descriptive statistics for fixed effects using Yang (2012) study period

Variable	N	Mean	1%	25%	Median	75%	99%	MIN	MAX	STDEV
Panel A: Estimation Sample (1996 - 2005)										
FE_MGR_ACCU	240	0.004	-0.108	-0.007	0.003	0.017	0.110	-0.209	0.354	0.044
FE_FIRM_ACCU	414	-0.021	-0.238	-0.096	-0.024	0.041	0.316	-4.059	0.475	0.137
Panel B: Testing Sample (2006 - 2009)										
FE_MGR_ACCU	103	-0.001	-0.108	-0.010	0.002	0.013	0.083	-0.123	0.354	0.033
FE_FIRM_ACCU	107	0.007	-0.203	-0.076	-0.011	0.072	0.475	-0.561	0.475	0.122

This table provides the descriptive statistics for manager fixed effects on accuracy using the Yang (2012) estimation period (1996-2005) and test period (2006-2009). The estimation period includes 240 managers, 414 firms and 2,517 observations. The test period includes 103 managers, 107 firms and 1,547 observations. Variable Definitions: FE_MGR_ACCU is the raw fixed effects of the manager on forecast accuracy. FE_FIRM_ACCU is the raw fixed effects of the firm on forecast accuracy.

Table 10 Panel B provides the descriptive statistics for the managers whose fixed effects were obtained in the estimation period and also provided management earnings forecasts during the Yang (2012) test period of 2006-2009. The mean for manager fixed effects on accuracy for the test period is -0.001 and the mean for firm fixed effects on accuracy is 0.007. It can be seen that the signs for mean manager and firm fixed effects for accuracy flip in the test period compared to the estimation period. One possible reason is because there are less extreme values for manager and firm fixed effects on accuracy in the test period. The minimum value for firm fixed effects on forecast accuracy is -4.059 in the estimation period while the minimum value in the test period is -0.561. However, the standard deviation for manager and firm fixed effects obtained are comparable in the estimation sample and the testing sample. As previously mentioned, Yang (2012) does not report standard deviations of manager and firm fixed effects estimated. The interquartile range for manager fixed effects in the test period in this sample is 0.023 compared to Yang's 0.016 and the interquartile range for firm fixed effects is 0.148 compared to Yang's 0.054. These differences in fixed effects highlight the sample differences between this study and Yang (2012), which could impact on the results obtained.

As discussed in Section 3.3, because the sample period (1996-2014) in this thesis is longer than Yang (2012) and it is reasonable to expect that manager and firm forecasting performance changes over time, extending estimation periods are used to estimate fixed effects. The first estimation period is 1996-2005 and extends in increments of one year. The last estimation period is 1996-2013. The test period when using extending estimation periods is 2006-2014. Table 8 provides the descriptive statistics for the test period 2006-2014, when extending estimation periods are used in estimating the fixed effects on accuracy, frequency and precision. The sample includes 4,202 management earnings forecasts issued by 237 managers and 253 firms.

Distributions of manager fixed effects and firm fixed effects coefficients are centered around zero except for firm fixed effects on forecast frequency which has a mean of 1.644. There is variation in the manager fixed effect estimates on accuracy (FE_MGR_ACCU) with managers in the 75th percentile issuing forecasts that are more accurate by about 1.8% of price than those issued by managers in the 25th percentile. Similar to what is obtained when the Yang (2012) sample is used, the mean and median manager fixed effects on accuracy are lower than those obtained by Yang (2012). Firm fixed effects on accuracy are comparable to those obtained by Yang (2012). Manager fixed effects on frequency (FE_MGR_FREQ) show that managers in the 75th percentile provide about 3.24 more forecasts each year than managers in the 25th percentile. Variation in management fixed effects on width of forecasts (FE_MGR_WIDTH) is low with managers in the 75th percentile issuing forecasts with a width at about 0.3% of price more precise than managers in the 25th percentile.

Table 11 Descriptive statistics for fixed effects using extending estimation periods

Variable	N	Mean	1%	25%	Median	75%	99%	MIN	MAX	STDEV
FE_MGR_ACCU	237	0.002	-0.108	-0.007	0.002	0.011	0.093	-0.185	0.473	0.033
FE_FIRM_ACCU	253	-0.022	-0.162	-0.048	-0.027	-0.002	0.147	-0.292	0.341	0.054
FE_MGR_FREQ	237	-0.338	-6.231	-1.977	-0.249	1.259	7.211	-13.402	11.647	2.704
FE_FIRM_FREQ	253	1.644	-5.416	-0.574	1.726	3.890	9.053	-8.212	14.751	3.396
FE_MGR_WIDTH	237	0.000	-0.030	-0.001	0.000	0.002	0.019	-0.159	0.532	0.022
FE_FIRM_WIDTH	253	0.005	-0.018	-0.001	0.002	0.008	0.053	-0.023	0.110	0.012

This table provides descriptive statistics for the estimated fixed effects during the test period 2006-2014 when extending estimation periods are used. The sample in the test period includes 237 managers, 253 firms and 4,202 observations. Variable Definitions: FE_MGR_ACCU is the raw fixed effects of the manager on forecast accuracy. FE_FIRM_ACCU is the raw fixed effects of the firm on forecast accuracy. FE_MGR_FREQ is the raw fixed effects of the manager on forecast frequency. FE_FIRM_FREQ is the raw fixed effects of the firm on forecast frequency. FE_MGR_WIDTH is the raw fixed effects of the manager on forecast precision (width of the range). FE_FIRM_WIDTH is the raw fixed effects of the firm on forecast precision (width of the range).

4.3 Correlations

The correlation matrix for all variables for the 2006-2014 test period sample of 4,202 management earnings forecasts used to test Hypotheses 1 and 2 is reported in Table 12. SIZE is strongly associated with firm fixed effects on forecast accuracy (correlation = 0.61), forecast frequency (correlation = -0.21) and forecast width (correlation = 0.40). This indicates that bigger firms have stronger firm fixed effects on management earnings forecast performance. As discussed in Section 3.6.1, this could imply that manager fixed effects for larger firms may be lower. As expected, prior forecast accuracy is positively associated with market reaction (correlation = 0.10) and analyst forecast revisions (correlation = 0.21). In general, quartile ranks of manager fixed effects are negatively associated with the quartile ranks of firm fixed effects. This implies that manager fixed effects on forecast performance increase as firm fixed effects on forecast performance decrease.[37] The quartile rank of manager fixed effects on accuracy is strongly positively associated with the quartile rank of manager fixed effects on precision (correlation = 0.42).[38] Similarly, the quartile rank of firm fixed effects on accuracy is strongly positively associated with the quartile rank of firm fixed effects on precision (correlation = 0.73). Given the small sample size, this may work against identifying significant effects when both quartile ranks are included in the same model because there is little variation unique to each quartile rank (Kennedy, 2003).[39]

The correlation matrix for all variables for the 2016-2014 test period sample of 161 managers and 2,691 observations with data available to test Hypotheses 3 and 4 are reported in Table 13. Size is negatively correlated with financial expertise (correlation = -0.30) which suggests that the larger the firm the less likely the manager will have an accounting/finance background.

[37] It is possible that this could also be a design artefact (Fee et al., 2013). Hypotheses 3 and 4 tackle some of this issue by examining observable manager attributes in addition to manager fixed effects on prior forecast performance.
[38] The correlations cannot be compared with Bamber et al. (2010) and Yang (2012) because they do not report correlations for manager and firm fixed effect coefficients.
[39] In additional analyses, I follow Bamber et al. (2010) and use a categorical variable for precision to test the hypotheses.

Firm size is positively correlated with the manager's network size (correlation = 0.49), press coverage (correlation = 0.45) and the number of awards won by the manager (correlation = 0.40). This suggests that larger firms are likely to hire more connected, visible, high-profile and better performing managers. It could also mean that managers employed by larger firms receive more exposure and make more connections, are covered more by the press and win more awards. The manager's sex is positively correlated with press coverage (correlation = 0.31) and number of awards won (correlation = 0.30) which suggests that female managers are more likely to receive more press coverage and more awards. Military experience is positively associated with age (correlation = 0.28) which is expected as older managers are more likely to have served in the military. Financial expertise is negatively correlated with military experience (correlation = -0.23), network size (correlation = -0.28) and press coverage (correlation = -0.21). This suggests that managers with an accounting/finance background are less likely to have served in the military, have fewer connections and lower press coverage. MBA and Ivy league education are positively correlated which suggests that managers are more likely to have a received an MBA from an Ivy league university. Network size and tenure are positively correlated with LEGAL which suggests that managers with a legal background are more likely to be more connected and have longer tenures.

The managerial ability score obtained from Demerjian et al. (2012) is positively correlated the number of awards won by the manager, which suggests that higher ability managers are more likely to be higher performing and win more awards. Press coverage is highly positively correlated with the number of awards won (correlation = 0.83). This result may be the consequence of the fact that managers who win more awards are likely to be more high-profile and covered more by the press. Tenure and forecast frequency are positively correlated (correlation = 0.22) which suggests that longer tenured managers are more likely to issue management earnings forecasts.

Overall, the results in Table 13 show that many of the manager attributes are correlated. While most coefficients are not very large, there is still the potential for multicollinearity, which combined with the low sample size, may yield unreliable estimates for coefficients of the

Table 12 Correlation matrix (Hypotheses 1 and 2)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
(1)	CAR(-1,1)	1.00																											
(2)	AFREV	**0.32**	1.00																										
(3)	SIZE	0.00	**0.07**	1.00																									
(4)	LOSS	**-0.04**	**-0.16**	**-0.13**	1.00																								
(5)	ROA	**-0.04**	0.01	**-0.06**	**-0.14**	1.00																							
(6)	INST	0.00	**-0.05**	**-0.45**	**0.04**	**0.03**	1.00																						
(7)	ANALYSTS	-0.01	**0.11**	**0.48**	**-0.08**	**0.15**	**-0.08**	1.00																					
(8)	HORIZON	**0.06**	0.00	**0.15**	**-0.09**	-0.02	**-0.12**	**0.10**	1.00																				
(9)	EARNVOL	-0.02	**-0.05**	**0.06**	0.03	0.01	**0.04**	-0.02	0.00	1.00																			
(10)	ANNUAL	0.03	**0.06**	**0.20**	**-0.15**	**-0.04**	**-0.16**	**0.17**	**0.58**	-0.01	1.00																		
(11)	OUTDIR	0.01	0.02	**-0.09**	**-0.07**	**0.09**	**0.09**	**0.08**	**-0.05**	**0.03**	**-0.07**	1.00																	
(12)	MTB	0.01	**0.04**	-0.02	-0.01	**0.29**	0.02	**0.08**	0.03	**0.04**	**0.04**	0.02	1.00																
(13)	CONC	**-0.05**	**-0.12**	**-0.32**	**0.13**	**-0.15**	**-0.13**	**-0.26**	-0.01	**0.04**	-0.01	**-0.06**	**0.05**	1.00															
(14)	LITRISK	**-0.04**	**-0.05**	**-0.10**	**0.12**	**-0.09**	**0.13**	-0.01	**-0.09**	**-0.04**	**-0.11**	0.02	**-0.13**	**0.06**	1.00														
(15)	RESTRUCT	**-0.03**	**-0.05**	**0.04**	0.02	**-0.11**	0.03	**-0.03**	**-0.06**	-0.03	**-0.06**	**0.09**	-0.01	0.00	**0.09**	1.00													
(16)	ACQ	-0.01	-0.02	**-0.06**	-0.01	**-0.03**	**0.09**	0.01	0.02	0.00	-0.01	**0.06**	**-0.05**	**0.09**	0.00	**-0.10**	1.00												
(17)	R&D	0.03	-0.01	-0.02	**0.18**	**0.10**	**-0.04**	-0.03	**-0.11**	-0.03	**-0.21**	**0.07**	**0.10**	0.01	**0.09**	**0.24**	**-0.11**	1.00											
(18)	ACCURACY	**0.10**	**0.21**	**0.03**	**-0.08**	**0.07**	**-0.10**	**0.05**	**-0.05**	**-0.10**	-0.03	0.02	-0.01	**-0.15**	-0.02	**-0.10**	-0.01	0.01	1.00										
(19)	FREQUENCY	-0.02	0.01	**0.08**	0.00	**0.16**	**0.15**	**0.13**	**-0.07**	**0.04**	**-0.17**	**0.08**	0.01	**-0.10**	**-0.08**	**-0.08**	0.03	**-0.08**	0.03	1.00									
(20)	WIDTH	-0.01	**-0.07**	**0.20**	**-0.03**	**-0.12**	**-0.18**	0.02	**0.19**	**0.30**	**0.29**	**-0.06**	0.01	**0.13**	**-0.06**	0.02	0.01	**-0.12**	**-0.23**	**-0.14**	1.00								
(21)	RAW_NEWS	**0.16**	**0.39**	-0.01	**-0.05**	-0.01	-0.02	**0.06**	-0.01	0.01	-0.02	-0.02	0.03	**-0.05**	0.01	-0.07	0.01	0.01	**0.41**	-0.03	0.00	1.00							
(22)	NEWS	**0.05**	**0.17**	-0.01	-0.01	-0.01	0.00	**0.04**	**-0.11**	-0.01	0.00	-0.01	**0.03**	-0.03	0.00	**-0.06**	0.02	0.00	**0.20**	0.00	-0.01	**0.43**	1.00						
(23)	RANK_FE_MGR_ACCU	0.00	0.00	**-0.08**	**0.04**	**-0.06**	**0.04**	-0.03	0.01	**-0.07**	-0.02	**0.03**	-0.03	**0.05**	0.01	**-0.03**	**0.06**	**-0.05**	**0.04**	**0.08**	**-0.10**	**0.06**	**0.04**	1.00					
(24)	RANK_FE_MGR_FREQ	-0.01	-0.01	-0.03	0.01	**-0.07**	-0.02	**-0.04**	0.00	**-0.10**	**-0.05**	**-0.08**	**-0.04**	**0.05**	**-0.12**	**-0.10**	0.00	-0.01	**-0.04**	**0.13**	**-0.05**	**-0.05**	-0.02	0.03	1.00				
(25)	RANK_FE_MGR_WIDTH	0.01	-0.01	**-0.08**	**-0.04**	**0.07**	0.00	-0.01	0.00	**0.04**	-0.01	**0.09**	-0.02	0.02	**-0.05**	**-0.05**	**-0.04**	**-0.04**	**0.05**	0.00	**-0.08**	**0.04**	0.01	**0.42**	**-0.03**	1.00			
(26)	RANK_FE_FIRM_ACCU	**0.04**	**0.06**	**0.61**	-0.02	**-0.05**	**-0.20**	**0.23**	**0.05**	**0.06**	**0.04**	**-0.05**	**0.10**	**-0.20**	**-0.06**	**0.19**	**-0.07**	**0.45**	**0.09**	0.02	**0.08**	**0.08**	0.02	**-0.32**	**-0.06**	**-0.23**	1.00		
(27)	RANK_FE_FIRM_FREQ	0.02	**-0.04**	**-0.21**	**0.05**	**0.10**	**0.33**	**-0.06**	**-0.08**	**0.08**	**-0.14**	**0.18**	0.01	-0.03	**0.10**	**0.05**	**0.21**	**-0.07**	0.00	**0.45**	**-0.07**	-0.02	-0.01	**0.03**	**-0.35**	0.03	**-0.13**	1.00	
(28)	RANK_FE_FIRM_WIDTH	**0.04**	0.02	**0.40**	**0.04**	**0.08**	-0.02	**0.27**	-0.02	**0.07**	**-0.08**	**0.05**	**0.13**	**-0.21**	0.02	**0.19**	-0.01	**0.57**	0.02	**0.04**	**-0.08**	0.00	-0.03	**-0.22**	0.01	**-0.34**	**0.73**	**-0.06**	1.00

This table provides the Pearson correlations for the sample of 237 managers and 4,202 management earnings forecasts issued over the test period 2006-2014. Variable definitions are available in Appendix A. The correlations marked in bold are significant at the 5% level.

Table 13 Correlation matrix (Hypotheses 3 and 4)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
(1)	CAR(-1,1)	1.00																															
(2)	AFREV	**0.30**	1.00																														
(3)	SIZE	-0.01	0.06	1.00																													
(4)	F_LOSS	-0.04	-0.17	**-0.11**	1.00																												
(5)	ROA	-0.02	0.04	0.00	**-0.16**	1.00																											
(6)	F_HORIZON	0.06	-0.01	**0.10**	**-0.08**	**0.05**	1.00																										
(7)	SEX	0.01	0.00	**0.06**	-0.02	**-0.09**	0.03	1.00																									
(8)	AGE	0.02	0.01	**0.06**	0.01	**-0.04**	**0.05**	0.02	1.00																								
(9)	FIN_EXP	-0.01	**-0.04**	**-0.30**	0.02	**-0.04**	0.03	**0.06**	**-0.13**	1.00																							
(10)	MBA	0.01	0.02	**0.13**	**-0.05**	-0.03	**-0.06**	**0.18**	0.00	**-0.15**	1.00																						
(11)	LEGAL	0.00	0.02	**0.19**	**-0.04**	**-0.09**	-0.03	**-0.06**	0.02	**-0.18**	**-0.18**	1.00																					
(12)	IVY	-0.01	-0.01	**0.18**	**-0.07**	**-0.11**	-0.03	**0.07**	**-0.08**	**-0.10**	**0.38**	0.03	1.00																				
(13)	MIL_EXPER	0.01	**0.04**	**0.08**	**-0.05**	0.03	**0.07**	**0.09**	**0.28**	**-0.23**	0.01	**-0.08**	**-0.04**	1.00																			
(14)	NETWORK	0.01	0.02	**0.49**	0.00	**-0.12**	**0.08**	0.03	**0.14**	**-0.28**	-0.03	**0.29**	**0.26**	**0.12**	1.00																		
(15)	M_ABILITY	0.01	**0.05**	**0.08**	-0.02	**0.22**	-0.01	**0.07**	**-0.11**	**-0.05**	0.03	**-0.18**	**0.08**	**0.08**	-0.02	1.00																	
(16)	PRESS_COV	0.00	-0.01	**0.45**	-0.03	**-0.04**	**0.06**	**0.31**	**0.13**	**-0.21**	0.01	0.02	**0.17**	**0.10**	**0.38**	**0.10**	1.00																
(17)	AWARDS	-0.01	0.00	**0.40**	-0.03	**-0.06**	**0.05**	**0.30**	**0.20**	**-0.16**	**0.06**	**0.11**	**0.24**	**0.20**	**0.40**	**0.07**	**0.83**	1.00															
(18)	TENURE	0.03	**0.05**	**0.08**	-0.03	-0.01	**-0.07**	**-0.16**	**0.13**	**-0.12**	**-0.13**	**0.40**	**0.06**	**-0.08**	**0.10**	**-0.06**	-0.03	0.02	1.00														
(19)	MGR_CHAIR	0.02	**-0.05**	**0.05**	-0.03	**-0.08**	0.02	0.01	**-0.11**	**-0.08**	**0.06**	0.03	**0.26**	**0.04**	**0.07**	-0.02	0.02	**0.08**	**0.17**	1.00													
(20)	CEO_CFO_EXPER	-0.01	0.02	**-0.23**	0.00	**0.06**	0.00	**0.10**	**-0.06**	0.00	0.04	**-0.05**	**-0.13**	0.02	**-0.18**	0.01	**-0.12**	**-0.13**	**-0.09**	-0.03	1.00												
(21)	CHARITY	-0.03	-0.01	**-0.13**	0.01	0.02	-0.03	-0.03	**0.08**	**-0.08**	**-0.04**	-0.03	**-0.06**	-0.03	-0.01	**0.10**	-0.02	-0.03	0.00	**-0.06**	**0.11**	1.00										
(22)	ACCURACY	0.04	**0.23**	-0.01	**-0.09**	**0.14**	**-0.06**	-0.01	0.00	**-0.07**	**0.06**	0.01	0.02	0.00	**-0.05**	0.02	0.03	**0.04**	**0.07**	**-0.05**	**0.06**	0.00	1.00									
(23)	FREQUENCY	-0.02	0.01	**0.06**	**0.05**	**0.12**	**-0.06**	**-0.07**	**-0.11**	**-0.07**	-0.01	**0.11**	**-0.05**	**0.05**	0.01	**0.13**	**0.06**	0.01	**0.22**	**-0.06**	**-0.13**	**0.06**	0.03	1.00								
(24)	WIDTH	0.00	**-0.09**	**0.14**	-0.01	**-0.07**	**0.15**	**0.11**	**0.07**	**0.05**	0.04	-0.03	-0.03	**0.16**	**0.09**	-0.03	0.02	**0.04**	**-0.04**	**0.06**	0.02	**-0.08**	**-0.34**	**-0.17**	1.00							
(25)	RAW_NEWS	**0.10**	**0.37**	**-0.05**	**-0.05**	**0.04**	-0.02	0.01	0.03	**-0.07**	0.06	0.01	0.02	0.02	0.00	0.00	0.01	0.01	**0.04**	0.01	0.03	0.00	**0.39**	-0.03	0.00	1.00							
(26)	NEWS	0.03	**0.17**	-0.03	-0.01	0.01	**-0.10**	-0.04	0.03	-0.02	0.04	0.00	0.02	-0.01	-0.01	0.01	-0.01	0.00	**0.04**	-0.02	0.03	0.01	**0.20**	0.02	-0.02	**0.47**	1.00						
(27)	RANK_FE_MGR_ACCU	0.00	-0.01	**-0.12**	**0.05**	**-0.08**	0.00	**-0.05**	**0.06**	**0.07**	-0.04	0.03	**-0.06**	**-0.11**	**-0.20**	-0.01	**-0.09**	**-0.08**	0.00	**-0.10**	**0.16**	**0.16**	0.03	**0.07**	**-0.13**	**0.07**	0.03	1.00					
(28)	RANK_FE_MGR_FREQ	-0.01	-0.04	**-0.05**	0.04	**-0.07**	-0.02	**-0.14**	**-0.08**	**0.10**	0.02	**-0.10**	**0.13**	**0.05**	0.02	**0.14**	0.04	0.02	0.01	**0.08**	**-0.13**	**0.04**	**-0.07**	**0.11**	**-0.08**	**-0.08**	-0.02	0.01	1.00				
(29)	RANK_FE_MGR_WIDTH	0.01	-0.03	**-0.06**	**-0.07**	**0.13**	0.01	**-0.06**	0.03	0.04	-0.03	**0.07**	-0.02	**-0.17**	-0.03	**-0.04**	-0.01	-0.01	0.04	-0.03	0.02	**0.06**	**0.07**	-0.01	**-0.09**	**0.06**	0.00	**0.41**	-0.01	1.00			
(30)	RANK_FE_FIRM_ACCU	0.03	**0.07**	**0.65**	-0.03	-0.01	0.03	**0.04**	**0.14**	**-0.33**	**0.13**	**0.18**	**0.15**	**0.08**	**0.55**	**0.11**	**0.28**	**0.25**	0.01	**-0.07**	**-0.15**	**-0.11**	**0.08**	**-0.04**	**0.10**	**0.10**	**0.05**	**-0.32**	**-0.08**	**-0.17**	1.00		
(31)	RANK_FE_FIRM_FREQ	0.02	-0.02	**-0.17**	**0.06**	0.04	-0.04	**0.06**	-0.01	**-0.12**	-0.04	**0.18**	**-0.13**	**-0.05**	**-0.04**	**-0.09**	**-0.06**	**-0.05**	**0.25**	**-0.08**	**0.11**	**0.05**	0.01	**0.45**	-0.02	-0.02	-0.01	0.02	**-0.37**	0.00	**-0.13**	1.00	
(32)	RANK_FE_FIRM_WIDTH	0.01	**0.04**	**0.52**	0.02	**0.09**	0.01	0.01	**0.12**	**-0.33**	**0.08**	**0.07**	**0.10**	**0.12**	**0.48**	**0.16**	**0.27**	**0.23**	**-0.07**	**-0.12**	**-0.20**	0.01	0.00	**-0.07**	0.01	0.00	-0.01	**-0.24**	0.03	**-0.27**	**0.79**	**-0.17**	1.00

This table provides the Pearson correlations for the sample of 160 managers and 2,691 observations during the test period 2006-2014 with data available for all managerial attributes used to test Hypotheses 3 and 4. Variable definitions are available in Appendix A. The correlations marked in bold are significant at least at the 5% level.

variables concerned. Therefore, I examine the association between investors' and analysts' reactions and each manager attribute individually, before including them together in the multiple regression.

4.4 Testing Hypothesis 1

Hypothesis 1 predicts a positive association between manager prior forecast performance and the stock price reaction to each unit of forecast news. Section 4.4.1 presents the results when the association between manager fixed effects on accuracy and stock market reaction is tested using the Yang (2012) study period. Section 4.4.2 reports the results when the Yang (2012) study period is used but when forecast news is adjusted for bundled forecasts using the Rogers and Van Buskirk (2013) approach. Section 4.4.3 reports the results for Hypothesis 1 when extending estimation periods are used.

4.4.1 Testing Hypothesis 1 using Yang (2012) Study Period

The results using the same estimation period 1996-2005 and test period 2006-2009 as Yang (2012) are reported in Table 14. The forecast news measure (RAW_NEWS) in this test follows Yang (2012) and does not adjust for the presence of bundled forecasts. It is calculated as the difference between the management earnings forecast (midpoint of the range) and analyst forecast consensus 90 days prior to the release of the management earnings forecast scaled by price (Yang, 2012, Hilary et al., 2014).

Table 14 Results using the Yang (2012) study period and raw forecast news

VARIABLES		(1) 2006-2009 CAR(-1,1)	(2) 2006-2009 CAR(-1,1)
RAW_NEWS	+	3.302*	5.450***
		(0.056)	(0.004)
RANK_FE_MGR_ACCU	?	-0.001	0.000
		(0.711)	(0.799)
RANK_FE_MGR_ACCU×RAW_NEWS	+	-0.221	-0.098
		(0.365)	(0.691)
RANK_FE_FIRM_ACCU	?		0.007***
			(0.001)
RANK_FE_FIRM_ACCU×RAW_NEWS	+		0.727***
			(0.004)
SIZE	?	0.002	-0.002
		(0.213)	(0.173)
SIZE×RAW_NEWS	?	-0.217	-0.722***
		(0.214)	(0.004)
F_LOSS	?	-0.021*	-0.029**
		(0.067)	(0.013)
F_LOSS×RAW_NEWS	?	-1.653**	-2.417***
		(0.014)	(0.001)
ROA	?	-0.061**	-0.058**
		(0.033)	(0.039)
ROA×RAW_NEWS	+	6.828**	5.252*
		(0.022)	(0.082)
HORIZON	?	0.005	0.006
		(0.352)	(0.240)
HORIZON×RAW_NEWS	?	0.144	0.415
		(0.840)	(0.559)
Constant		0.144	0.415
		(0.840)	(0.559)
Year Fixed Effects		YES	YES
Observations		1,547	1,547
Adj R-squared		0.024	0.034

This table reports the results from regressing investors' reaction on manager fixed effects on accuracy using the Yang (2012) study period and raw forecast news. The sample includes 103 managers and 1,547 observations. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

The R-squareds (not tabulated) obtained are 0.033 for the model with manager fixed effects only (Column 1) and 0.044 for the model that controls for firm fixed effects on accuracy (Column 2).[40] These are comparable to Yang (2012).

As opposed to Yang (2012), as seen in Column 1 of Table 14, no significant results are obtained for manager-specific fixed effects on accuracy. This could possibly be because of the sample differences with Yang (2012). However, further analyses show similar results when alternative test periods are used.[41] Once firm fixed effects on management earnings forecast accuracy are included as controls (Column 2), Yang (2012) finds that the manager-specific effect on accuracy is no longer significant while the firm-specific effect on accuracy interacted with news is positive and significant. As seen in Column 2 of Table 14, once firm fixed effects on forecast accuracy are included as controls, RANK_FE_FIRM_ACCU×NEWS is positive and significant which is similar to Yang (2012). This implies that the market reaction is stronger for management earnings forecast news released by firms with higher prior forecast accuracy.

SIZE×NEWS is negative and significant, which suggests that there is a smaller reaction to management forecast news released by larger firms. As discussed in Chapter 3, this could be because larger firms have more pre-disclosure and less unexpected information which would incite a smaller reaction from market participants (Atiase, 1985).

[40] Yang (2012) reports R-squareds but does not report Adjusted R-squareds.
[41] See Appendix D where I report the results when the Yang (2012) estimation period and alternative test periods are used.

4.4.2 Testing Hypothesis 1 using Yang (2012) Study Period (Adjusted for Bundled Forecasts)

The results for when the forecast news measure is adjusted for bundled forecasts using the Rogers and Van Buskirk (2013) approach are reported in Table 15. Appendix B provides details of this adjustment. Data requirements for this adjustment leads to a sample of 94 managers and 1,267 observations. As seen in Table 14, without adjustment, forecast news (RAW_NEWS) is positive and significant which suggests that the market reaction is stronger when more news is released. However, when forecast news is adjusted bundled forecasts (NEWS) in Table 15, forecast news is no longer significant. This suggests that the results in Table 14 maybe reflect the market's reaction to the earnings announcement rather than the management earnings forecast news. Similar to results obtained in Table 14, manager fixed effects on accuracy (RANK_FE_MGR_ACCU) interacted with NEWS is not significant suggesting that the market does not vary with manager-specific forecast accuracy. In addition, compared to results in Table 14, when forecast news is adjusted for bundling, RANK_FE_FIRM_ACCU×NEWS is no longer significant but RANK_FE_FIRM_ACCU is positive and significant suggesting that the market reacts more strongly to issuance of management earnings forecasts by firms with higher firm-specific prior forecast accuracy.

Overall, the results in Table 15 when news is adjusted for bundled management earnings forecasts, suggest that the results obtained by Yang (2012) may be driven by the market's reaction to earnings announcements rather than to the management earnings forecasts.

Table 15 Results using the Yang (2012) study period and adjusted forecast news

VARIABLES		(1) 2006-2009 CAR(-1,1)	(2) 2006-2009 CAR(-1,1)
NEWS	+	-0.039	-0.312
		(0.947)	(0.626)
RANK_FE_MGR_ACCU	?	0.000	0.001
		(0.988)	(0.674)
RANK_FE_MGR_ACCU×NEWS	+	0.007	-0.017
		(0.930)	(0.849)
RANK_FE_FIRM_ACCU	?		0.006**
			(0.025)
RANK_FE_FIRM_ACCU×NEWS	+		-0.087
			(0.489)
SIZE	?	0.002	-0.001
		(0.179)	(0.517)
SIZE×NEWS	?	-0.028	0.034
		(0.644)	(0.733)
F_LOSS	?	-0.031**	-0.032**
		(0.035)	(0.027)
F_LOSS×NEWS	?	-1.226*	-1.100*
		(0.058)	(0.093)
ROA	?	-0.030	-0.031
		(0.367)	(0.354)
ROA×NEWS	+	2.533*	2.839*
		(0.080)	(0.051)
HORIZON	?	0.010	0.010*
		(0.110)	(0.093)
HORIZON×NEWS	?	0.290	0.304
		(0.413)	(0.390)
Constant		-0.018	-0.008
		(0.214)	(0.586)
Year Fixed Effects		YES	YES
Observations		1,267	1,267
Adj R-squared		0.005	0.008

This table reports the results from regressing investors' reaction on manager fixed effects on accuracy using the Yang (2012) sample period and adjusted forecast news. The sample includes 94 managers and 1,267 observations. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

4.4.3 Testing Hypothesis 1 using Extending Estimation Periods

Hypothesis 1 predicts a positive association between manager-specific forecast performance and stock price reaction to management earnings forecast news. Table 16 presents the results for Hypothesis 1. Because the different fixed effects on forecast performance measures are highly correlated, Columns 1, 2 and 3 separately present the results for manager fixed effects on accuracy, frequency and precision, respectively. Column 4 presents the results when all manager-specific forecast performance measures are included in the model.

Overall, manager-specific forecast performance does not seem to affect the market's response to management earnings forecasts. On the other hand, there is some evidence that firm-specific forecast performance affects the market's response to management earnings forecasts. As shown in Column 1, RANK_FE_FIRM_ACCU is positive and significant suggesting that the firm's propensity to issue accurate forecasts elicits a stronger market reaction to the management earnings forecast. Column 2 shows a positive and significant coefficient on the interaction between RANK_FE_FIRM_FREQ and NEWS which suggests that there is a stronger reaction to each unit of news for firms with a propensity to issue forecasts more frequently. Column 3 shows a positive and significant coefficient for RANK_FE_FIRM_WIDTH but no significant results on the interaction between RANK_FE_FIRM_WIDTH and NEWS. This suggests a positive reaction to forecasts issued by firms with a historic propensity to issue more precise management earnings forecasts. Column 4 presents the results when all manager-specific and firm-specific forecast performance measures are included. The interaction between RANK_FE_FIRM_FREQ and NEWS continues to be positive and significant but RANK_FE_FIRM_ACCU is no longer significant.

Table 16 Results for Hypothesis 1 using extending estimation periods

VARIABLES		(1)	(2)	(3)	(4)
		2006-2014 CAR(-1,1)			
NEWS	+	0.892***	0.366	0.866***	0.365
		(0.000)	(0.157)	(0.000)	(0.223)
RANK_FE_MGR_ACCU	?	0.001			0.000
		(0.363)			(0.870)
RANK_FE_MGR_ACCU×NEWS	+	-0.013			-0.019
		(0.671)			(0.591)
RANK_FE_MGR_FREQ	?		-0.000		-0.000
			(0.830)		(0.897)
RANK_FE_MGR_FREQ×NEWS	+		0.012		0.012
			(0.714)		(0.745)
RANK_FE_MGR_WIDTH	?			0.002	0.002
				(0.105)	(0.189)
RANK_FE_MGR_WIDTH×NEWS	+			-0.007	-0.000
				(0.844)	(0.994)
RANK_FE_FIRM_ACCU	?	0.005***			0.003
		(0.000)			(0.102)
RANK_FE_FIRM_ACCU×NEWS	+	-0.025			0.040
		(0.432)			(0.298)
RANK_FE_FIRM_FREQ	?		0.002*		0.002**
			(0.055)		(0.050)
RANK_FE_FIRM_FREQ×NEWS	+		0.126***		0.139***
			(0.000)		(0.000)
RANK_FE_FIRM_WIDTH	?			0.005***	0.003*
				(0.000)	(0.095)
RANK_FE_FIRM_WIDTH×NEWS	+			-0.060	-0.091**
				(0.113)	(0.032)
SIZE	?	-0.003***	-0.001	-0.003***	-0.003***
		(0.001)	(0.416)	(0.003)	(0.004)
SIZE×NEWS	?	-0.079***	-0.067***	-0.067***	-0.052**
		(0.001)	(0.004)	(0.005)	(0.044)
F_LOSS	?	-0.022***	-0.020**	-0.023***	-0.023***
		(0.007)	(0.015)	(0.005)	(0.005)
F_LOSS×NEWS	?	0.094	0.037	0.088	0.071
		(0.728)	(0.890)	(0.740)	(0.795)
ROA	?	-0.033**	-0.039**	-0.043***	-0.043**
		(0.042)	(0.018)	(0.009)	(0.011)
ROA×NEWS	+	1.713***	1.616***	1.758***	1.603***
		(0.000)	(0.000)	(0.000)	(0.000)
HORIZON	?	0.014***	0.014***	0.015***	0.015***
		(0.000)	(0.000)	(0.000)	(0.000)
HORIZON×NEWS	?	-0.018	0.007	-0.019	0.007
		(0.891)	(0.960)	(0.887)	(0.955)
Constant		0.006	-0.005	-0.000	-0.006
		(0.432)	(0.613)	(0.983)	(0.560)
Year Fixed Effects		YES	YES	YES	YES
Observations		4,202	4,202	4,202	4,202
Adj R-squared		0.024	0.025	0.025	0.028

This table reports the results from regressing investors' reaction on manager fixed effects on accuracy, frequency and precision. The sample includes 237 managers and 4,202 management earnings forecasts issued over the test period 2006-2014. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

Once all forecast performance measures are included in one model (Model 2), the interaction between RANK_FE_FIRM_WIDTH and NEWS is negative and significant. This suggests that there is a weaker market reaction to forecast news issued by firms with a higher propensity to issue more precise forecasts. One potential explanation could be the high correlation between RANK_FE_FIRM_ACCU and RANK_FE_FIRM_WIDTH.[42] Overall, results do not support Hypothesis 1.

4.5 Testing Hypothesis 2

Hypothesis 2 predicts an association between manager-specific forecast performance and analysts' reactions to management earnings forecast news. Table 17 reports the results for Hypothesis 2. As in Section 4.4.3, because the different fixed effects on forecast performance measures are correlated, Columns 1, 2 and 3 separately present the results for manager fixed effects on accuracy, frequency and precision, respectively and Column 4 presents the results when all manager-specific forecast performance measures are included.

As seen in Column 1, consistent with Hypothesis 2, the interaction between RANK_FE_MGR_ACCU and NEWS is positive and significant suggesting that analysts react more strongly to management earnings forecast news issued by managers with higher prior forecast accuracy. Consistent with prediction, ROA×NEWS is positive and significant suggesting that analysts react more strongly to management earnings forecasts issued by higher performing firms.

[42] In additional analyses, fixed effects on precision are estimated on a categorical precision measure by coding precision as 3 for point forecasts, 2 for range forecasts and 1 for open-ended forecasts.

Table 17 Results for Hypothesis 2 using extending estimation periods

		(1)	(2)	(3)	(4)
		2006-2014			
VARIABLES		AFREV			
NEWS	+	0.057***	-0.002	0.049***	-0.042*
		(0.001)	(0.939)	(0.008)	(0.069)
RANK_FE_MGR_ACCU	?	0.000			0.000
		(0.175)			(0.104)
RANK_FE_MGR_ACCU×NEWS	?	0.007***			0.006**
		(0.007)			(0.017)
RANK_FE_MGR_FREQ	?		-0.000		-0.000
			(0.481)		(0.481)
RANK_FE_MGR_FREQ×NEWS	?		0.000		0.003
			(0.845)		(0.211)
RANK_FE_MGR_WIDTH	?			-0.000	-0.000
				(0.772)	(0.324)
RANK_FE_MGR_WIDTH×NEWS	?			0.007***	0.005*
				(0.007)	(0.085)
RANK_FE_FIRM_ACCU	?	0.000**			0.000**
		(0.025)			(0.040)
RANK_FE_FIRM_ACCU×NEWS	?	-0.003			0.004
		(0.280)			(0.202)
RANK_FE_FIRM_FREQ	?		-0.000		-0.000
			(0.577)		(0.590)
RANK_FE_FIRM_FREQ×NEWS	?		0.018***		0.021***
			(0.000)		(0.000)
RANK_FE_FIRM_WIDTH	?			0.000	-0.000
				(0.480)	(0.389)
RANK_FE_FIRM_WIDTH×NEWS	?			0.001	-0.001
				(0.616)	(0.678)
SIZE	?	0.000	0.000***	0.000***	0.000
		(0.157)	(0.000)	(0.004)	(0.115)
SIZE×NEWS	?	-0.003	-0.000	-0.003	-0.001
		(0.170)	(0.942)	(0.132)	(0.542)
F_LOSS	?	-0.005***	-0.005***	-0.005***	-0.005***
		(0.000)	(0.000)	(0.000)	(0.000)
F_LOSS×NEWS	?	0.123***	0.121***	0.129***	0.117***
		(0.000)	(0.000)	(0.000)	(0.000)
ROA	?	0.001	0.001	0.001	0.001
		(0.454)	(0.553)	(0.606)	(0.405)
ROA×NEWS	+	0.071***	0.049**	0.063***	0.047*
		(0.004)	(0.040)	(0.009)	(0.078)
HORIZON	?	0.000	-0.000	0.000	0.000
		(0.903)	(0.929)	(0.898)	(0.949)
HORIZON×NEWS	?	-0.030***	-0.028***	-0.031***	-0.023**
		(0.007)	(0.009)	(0.005)	(0.039)
Constant		-0.002***	-0.002***	-0.002***	-0.002***
		(0.000)	(0.003)	(0.000)	(0.008)
Year Fixed Effects		YES	YES	YES	YES
Observations		4,052	4,052	4,052	4,052
Adj R-squared		0.086	0.010	0.087	0.102

This table reports the results from regressing analysts' reaction on manager fixed effects on accuracy, frequency and precision. The sample includes 236 managers and 4,052 management earnings forecasts issued over the test period 2006-2014. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

HORIZON×NEWS is negative and significant suggesting that analysts react more strongly to forecasts issued closer to the end of the fiscal period. LOSS×NEWS is positive and significant suggesting that analysts' reaction to management earnings forecasts issued loss firms is greater. As discussed in Chapter 3, this could be because loss firms provide management earnings forecasts less frequently and the forecasts managers do issue potentially have higher information content, which elicits a stronger reaction from market participants (Tang et al., 2016).

Column 2 presents the results for manager and firm fixed effects on frequency. The coefficient on RANK_FE_MGR_FREQ×NEWS is not significant but the interaction between NEWS and RANK_FE_FIRM_FREQ is positive and significant. This suggests that analysts' reaction is stronger for management earnings forecasts issued by firms with a historic propensity to issue more frequent forecasts. However, analysts' reaction does not seem to vary with manager-specific forecast frequency. Results for control variables are similar to those found under Column 1.

Column 3 presents the results for manager and fixed effects on precision (width of the range). As predicted, the coefficient on RANK_FE_MGR_WIDTH×NEWS is positive and significant. This suggests a stronger analyst reaction to the forecast news given by managers with a higher propensity to issue more precise management earnings forecasts. Results for control variables are similar to those found under Columns 1 and 2.

Column 4 presents the results when fixed effects on all manager fixed effects on forecast performance measures are included in one model (Model 3). When all variables are included in one model, the interaction between RANK_FE_MGR_ACCU and NEWS and between

RANK_FE_MGR_WIDTH and NEWS are still positive and significant. The interaction between RANK_FE_MGR_FREQ and NEWS is still not significant. The coefficient on RANK_FE_FIRM_ACCU is still positive and significant but its interaction with NEWS is not significant. The interaction between RANK_FE_FIRM_FREQ and NEWS is also still positive and significant. The results suggest that analysts' reaction is stronger to management earnings forecasts news issued by managers with historic propensities to issue more accurate and precise forecasts. Analysts' reaction is not associated with managers propensity to issue more frequent forecasts. However, analysts' reaction is positively associated with the firm's propensity to issue more frequent forecasts. The coefficients on the control variables behave as previously. Overall, the results provide support for Hypothesis 2. There is evidence that analysts react more strongly to forecast news provided by managers with a historical propensity to provide more accurate and precise forecasts.

4.6 Testing Hypothesis 3

Hypothesis 3 predicts that the market reaction to management earnings forecasts is conditioned by managers' personal, imputed and positional attributes. As discussed in Section 4.3, because managers' attributes are correlated, I first examine whether the market reaction varies with each manager attribute separately. I then include all manager attributes in the same model to test their effects on stock market reaction to management earnings forecasts.

4.6.1 Results for Personal Attributes (Hypothesis 3)

The results when personal attributes are examined separately are reported in Table 18. Personal

attributes examined include sex, age, financial expertise, MBA education, legal background, Ivy league education, military experience, and network size.

Columns 1 to 6 report the results for sex, age, financial expertise, MBA education, legal background, Ivy league education, military experience and network size, respectively. Control variables behave as reported above (see Table 16). No significant association is found between the interaction of NEWS and sex, age, financial expertise, MBA education, military experience or network size. As seen in Column 5, there is a positive association between LEGAL×NEWS and the market reaction to management earnings forecasts. This suggests that the market perceives management earnings forecasts news by managers from a legal background to be more credible. Prior research finds that managers with a legal background tend to be more conservative in their disclosures (Bamber et al., 2010, Custódio and Metzger, 2014, Davis et al., 2015). This result is consistent with the suggestion that the market may be aware that managers with legal backgrounds are more conscious of litigation risks and potentially more likely to provide credible forecasts.

Column 6 reports the results when Ivy league education is examined. There is a significant positive association between IVY×NEWS and the stock market reaction to management earnings forecasts. As discussed in Chapter 3, Ivy league education may be associated with academic excellence and perceived competence (Custódio and Metzger, 2014). As seen in Table 13, consistent with this argument, Ivy league education is positively correlated with network size, press coverage, and number of awards won by the manager. Therefore, it is possible that Ivy league education is correlated with measures that investors use to assess the perceived competence of managers which results in the market perceiving management earnings forecasts issued by managers with an Ivy league education to be more credible.

Table 18 Results for Hypothesis 3 (Personal attributes)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	2006-2014 CAR(-1,1)							
	M_ATTRIBUTES							
VARIABLES	**SEX**	**AGE**	**FIN_EXP**	**MBA**	**LEGAL**	**IVY**	**MIL_EXPER**	**NETWORK**
NEWS	0.357	1.242	0.199	0.396	0.457	0.484	0.427	-0.125
	(0.233)	(0.427)	(0.532)	(0.189)	(0.129)	(0.109)	(0.158)	(0.789)
M_ATTRIBUTES	**0.002**	**0.011**	**-0.002**	**0.001**	**0.001**	**0.001**	**0.004**	**0.001**
	(0.641)	**(0.320)**	**(0.337)**	**(0.619)**	**(0.873)**	**(0.757)**	**(0.410)**	**(0.775)**
M_ATTRIBUTES×NEWS	**-0.129**	**-0.214**	**0.130**	**-0.084**	**0.519*****	**0.270*****	**-0.105**	**0.037**
	(0.300)	**(0.568)**	**(0.118)**	**(0.314)**	**(0.001)**	**(0.003)**	**(0.529)**	**(0.506)**
RANK_FE_MGR_ACCU	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.866)	(0.899)	(0.858)	(0.797)	(0.843)	(0.816)	(0.761)	(0.933)
RANK_FE_MGR_ACCU×NEWS	-0.021	-0.017	-0.011	-0.010	-0.015	-0.031	-0.015	0.029
	(0.555)	(0.645)	(0.766)	(0.781)	(0.669)	(0.399)	(0.682)	(0.475)
RANK_FE_MGR_FREQ	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.001
	(0.922)	(0.966)	(0.885)	(0.956)	(0.907)	(0.884)	(0.925)	(0.393)
RANK_FE_MGR_FREQ×NEWS	0.007	0.006	-0.004	0.012	0.008	-0.003	0.006	0.030
	(0.857)	(0.871)	(0.916)	(0.737)	(0.821)	(0.934)	(0.867)	(0.420)
RANK_FE_MGR_WIDTH	0.002	0.002	0.001	0.001	0.002	0.002	0.002	0.001
	(0.179)	(0.195)	(0.214)	(0.237)	(0.199)	(0.190)	(0.192)	(0.433)
RANK_FE_MGR_WIDTH×NEWS	0.009	0.001	0.015	-0.007	-0.017	0.010	-0.001	0.012
	(0.814)	(0.972)	(0.697)	(0.853)	(0.653)	(0.799)	(0.980)	(0.759)
RANK_FE_FIRM_ACCU	0.003	0.003	0.003	0.003	0.003*	0.003	0.003	0.005**
	(0.102)	(0.115)	(0.118)	(0.110)	(0.074)	(0.115)	(0.100)	(0.018)
RANK_FE_FIRM_ACCU×NEWS	0.041	0.040	0.054	0.056	0.039	0.002	0.035	-0.002
	(0.288)	(0.309)	(0.170)	(0.198)	(0.318)	(0.954)	(0.371)	(0.957)
RANK_FE_FIRM_FREQ	0.002*	0.002**	0.002*	0.002*	0.002*	0.002*	0.002*	0.001
	(0.052)	(0.043)	(0.065)	(0.063)	(0.051)	(0.064)	(0.059)	(0.275)
RANK_FE_FIRM_FREQ×NEWS	0.139***	0.135***	0.144***	0.135***	0.128***	0.123***	0.135***	0.125***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.002)
RANK_FE_FIRM_WIDTH	0.003*	0.003	0.003	0.003	0.003	0.003	0.003	-0.001
	(0.092)	(0.101)	(0.111)	(0.101)	(0.115)	(0.112)	(0.116)	(0.771)
RANK_FE_FIRM_WIDTH×NEWS	-0.090**	-0.090**	-0.090**	-0.100**	-0.079*	-0.097**	-0.088**	0.004
	(0.034)	(0.034)	(0.034)	(0.027)	(0.063)	(0.028)	(0.045)	(0.936)
SIZE	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***	-0.004***

	(0.004)	(0.004)	(0.003)	(0.004)	(0.003)	(0.005)	(0.004)	(0.001)
SIZE×NEWS	-0.050*	-0.054**	-0.047*	-0.050*	-0.063**	-0.049*	-0.053**	-0.054
	(0.055)	(0.039)	(0.070)	(0.055)	(0.016)	(0.059)	(0.043)	(0.111)
F_LOSS	-0.023***	-0.023***	-0.023***	-0.023***	-0.022***	-0.022***	-0.022***	-0.021**
	(0.005)	(0.005)	(0.004)	(0.005)	(0.006)	(0.006)	(0.006)	(0.017)
F_LOSS×NEWS	0.055	0.072	0.037	0.057	0.112	0.090	0.044	-0.182
	(0.840)	(0.790)	(0.893)	(0.834)	(0.680)	(0.741)	(0.872)	(0.501)
ROA	-0.042**	-0.041**	-0.043***	-0.041**	-0.039**	-0.039**	-0.041**	-0.035*
	(0.013)	(0.014)	(0.010)	(0.015)	(0.022)	(0.020)	(0.015)	(0.060)
ROA×NEWS	1.557***	1.553***	1.574***	1.628***	1.777***	1.685***	1.571***	-0.674
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.169)
HORIZON	0.015***	0.015***	0.015***	0.015***	0.015***	0.015***	0.015***	0.014***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HORIZON×NEWS	-0.002	0.009	-0.002	-0.043	0.031	-0.015	-0.034	-0.058
	(0.989)	(0.944)	(0.986)	(0.746)	(0.817)	(0.911)	(0.801)	(0.667)
Constant	-0.006	-0.048	-0.003	-0.007	-0.006	-0.006	-0.007	0.013
	(0.554)	(0.269)	(0.808)	(0.518)	(0.593)	(0.542)	(0.503)	(0.315)
Year Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	4,202	4,202	4,202	4,159	4,202	4,159	4,165	3,358
Adj R-squared	0.028	0.028	0.029	0.028	0.031	0.029	0.028	0.012

This table reports the results from regressing investors' reaction on each personal attribute (sex, age, financial expertise, MBA education, legal background, IVY league education, military experience, and network size), separately, over 2006-2014. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

Overall, the results show that observable demographic characteristics of managers such as age, sex, financial expertise, MBA education and military experience, do not seem to have an effect on the stock market's reaction to management earnings forecasts. However, there is evidence that market seems to react more strongly to management earnings forecasts issued by managers with an Ivy league education and managers with a legal background.

4.6.2 Results for Imputed Attributes (Hypothesis 3)

The results when imputed attributes are examined separately are reported in Table 19. Imputed attributes examined include managerial ability (Demerjian et al. 2012), press coverage and number of awards won by the manager.

Columns 1 to 3 of Table 19 report the results for managerial ability, press coverage and number of awards won, respectively. Control variables behave as previously. No significant association is found between the interactions of NEWS with press coverage and number of awards won. One potential reason for the lack of significance for press coverage and awards won could be the lack of variation in those variables (see Table 13), with most managers having no press coverage or awards. The coefficient for M_ABILITY×NEWS is not significant but the main effect for managerial ability (M_ABILITY) is positive and significant at the 10% level which suggests that the stock market reaction to management earnings forecasts issuance is higher for managers with higher ability. Overall, there is no evidence that stock market reaction to the management earnings forecast news varies with managers' imputed attributes.

Table 19 Results for Hypothesis 3 (Imputed attributes)

	(1)	(2)	(3)
		2006-2014 CAR(-1,1)	
		M_ATTRIBUTES	
VARIABLES	**M_ABILITY**	**PRESS_COV**	**AWARDS**
NEWS	0.114	0.396	0.384
	(0.743)	(0.199)	(0.203)
M_ATTRIBUTES	**0.008***	**-0.000**	**-0.000**
	(0.075)	**(0.703)**	**(0.638)**
M_ATTRIBUTES×NEWS	**0.228**	**0.000**	**0.012**
	(0.144)	**(0.486)**	**(0.574)**
RANK_FE_MGR_ACCU	0.000	0.000	0.000
	(0.905)	(0.897)	(0.890)
RANK_FE_MGR_ACCU×NEWS	-0.022	-0.014	-0.019
	(0.585)	(0.704)	(0.601)
RANK_FE_MGR_FREQ	0.001	-0.000	-0.000
	(0.439)	(0.929)	(0.884)
RANK_FE_MGR_FREQ×NEWS	0.024	0.018	0.016
	(0.560)	(0.625)	(0.657)
RANK_FE_MGR_WIDTH	0.002	0.002	0.002
	(0.137)	(0.182)	(0.178)
RANK_FE_MGR_WIDTH×NEWS	0.013	-0.007	-0.004
	(0.777)	(0.853)	(0.910)
RANK_FE_FIRM_ACCU	0.003	0.003	0.003
	(0.245)	(0.121)	(0.118)
RANK_FE_FIRM_ACCU×NEWS	0.075	0.042	0.043
	(0.119)	(0.285)	(0.274)
RANK_FE_FIRM_FREQ	0.003***	0.002**	0.002**
	(0.008)	(0.047)	(0.049)
RANK_FE_FIRM_FREQ×NEWS	0.157***	0.141***	0.141***
	(0.000)	(0.000)	(0.000)
RANK_FE_FIRM_WIDTH	0.004*	0.003*	0.003*
	(0.079)	(0.085)	(0.090)
RANK_FE_FIRM_WIDTH×NEWS	-0.159***	-0.097**	-0.093**
	(0.007)	(0.025)	(0.029)
SIZE	-0.003***	-0.003***	-0.003**
	(0.010)	(0.010)	(0.011)
SIZE×NEWS	-0.034	-0.057**	-0.056**
	(0.304)	(0.032)	(0.038)
F_LOSS	-0.023***	-0.023***	-0.022***
	(0.008)	(0.005)	(0.005)
F_LOSS×NEWS	0.081	0.067	0.075
	(0.781)	(0.805)	(0.783)
ROA	-0.044**	-0.043***	-0.043**
	(0.017)	(0.010)	(0.011)
ROA×NEWS	1.639***	1.647***	1.633***
	(0.000)	(0.000)	(0.000)
HORIZON	0.019***	0.015***	0.015***
	(0.000)	(0.000)	(0.000)
HORIZON×NEWS	-0.031	0.014	0.007
	(0.838)	(0.918)	(0.961)
Constant	-0.020	-0.007	-0.007
	(0.104)	(0.504)	(0.500)
Year Fixed Effects	YES	YES	YES
Observations	3,536	4,185	4,202
Adj R-squared	0.034	0.028	0.028

This table reports the results from regressing investors' reaction on each imputed attribute (managerial ability score, press coverage and number of awards won), separately, over 2006-2014. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

4.6.3 Results for Positional Attributes (Hypothesis 3)

Positional attributes examined include tenure, manager/chair duality, CEO's CFO experience and charitable involvement. The results for tests involving positional attributes are reported in Table 20. Columns 1 to 4 present the results for tenure, manager/chair duality, CEO's CFO experience and charitable involvement, respectively.

Results indicate that there is no significant association between NEWS and tenure but the main effect for tenure is positive and significant at the 10% level. This suggests that there is a stronger market reaction to management earnings forecast issuance from managers who have been employed at the firm for longer. There is also no significant association between stock market reaction to management earnings forecasts news and manager/chair duality or charitable involvement. Contrary to intuition, the coefficient on CEO_CEO_EXPER×NEWS is negative and significant at the 5% level. This suggests that there is a weaker reaction to management earnings forecast news issued by CEOs with previous CFO experience. In other words, the results suggest that the market perceives management earnings forecasts issued by CEOs with CFO experience to be less credible. Prior research finds that firms appoint ex-CFO's as CEOs when the firm's disclosure quality has deteriorated (Matsunaga et al., 2013). It is therefore possible that the CEO_CFO_EXPER variable proxies for lower quality disclosures which would explain the negative association between CEO_CFO_EXPER×NEWS and stock market reaction. Another potential reason for this result could be that CEOs with observed CFO experience are younger and with less extensive networks because the disclosure of CFO status has only been reliably measured (by Execucomp) in the post-Sarbanes-Oxley period.

Table 20 Results for Hypothesis 3 (Positional attributes)

	(1)	(2)	(3)	(4)
	2006-2014 CAR(-1,1)			
	M_ATTRIBUTES			
VARIABLES	**TENURE**	**MGR_CHAIR**	**CEO_CFO_EXPER**	**CHARITY**
NEWS	0.449	0.337	0.596*	0.364
	(0.139)	(0.255)	(0.058)	(0.225)
M_ATTRIBUTES	**0.001***	**0.000**	**0.001**	**-0.018**
	(0.064)	**(0.860)**	**(0.648)**	**(0.105)**
M_ATTRIBUTES×NEWS	**0.013**	**-0.026**	**-0.235****	**0.299**
	(0.103)	**(0.747)**	**(0.015)**	**(0.650)**
RANK_FE_MGR_ACCU	0.001	0.000	0.000	0.000
	(0.669)	(0.861)	(0.969)	(0.774)
RANK_FE_MGR_ACCU×NEWS	-0.023	-0.019	-0.024	-0.020
	(0.530)	(0.581)	(0.503)	(0.579)
RANK_FE_MGR_FREQ	-0.000	-0.000	-0.000	-0.000
	(0.801)	(0.985)	(0.913)	(0.887)
RANK_FE_MGR_FREQ×NEWS	-0.007	0.010	-0.004	0.011
	(0.841)	(0.774)	(0.905)	(0.764)
RANK_FE_MGR_WIDTH	0.001	0.001	0.002	0.002
	(0.302)	(0.249)	(0.167)	(0.188)
RANK_FE_MGR_WIDTH×NEWS	-0.026	-0.001	-0.004	-0.001
	(0.503)	(0.982)	(0.921)	(0.985)
RANK_FE_FIRM_ACCU	0.003	0.003*	0.003	0.003
	(0.170)	(0.068)	(0.118)	(0.120)
RANK_FE_FIRM_ACCU×NEWS	0.020	0.041	0.040	0.040
	(0.615)	(0.288)	(0.308)	(0.300)
RANK_FE_FIRM_FREQ	0.002*	0.002*	0.002*	0.002**
	(0.087)	(0.065)	(0.058)	(0.050)
RANK_FE_FIRM_FREQ×NEWS	0.122***	0.139***	0.129***	0.138***
	(0.002)	(0.000)	(0.001)	(0.000)
RANK_FE_FIRM_WIDTH	0.003*	0.003	0.003*	0.003*
	(0.065)	(0.102)	(0.089)	(0.072)
RANK_FE_FIRM_WIDTH×NEWS	-0.098**	-0.093**	-0.084**	-0.091**
	(0.024)	(0.026)	(0.046)	(0.031)
SIZE	-0.003***	-0.003***	-0.003***	-0.003***
	(0.004)	(0.004)	(0.005)	(0.003)
SIZE×NEWS	-0.045*	-0.049*	-0.067**	-0.051**
	(0.094)	(0.053)	(0.012)	(0.049)
F_LOSS	-0.024***	-0.021**	-0.022***	-0.023***
	(0.004)	(0.012)	(0.006)	(0.005)
F_LOSS×NEWS	0.118	0.108	0.104	0.070
	(0.665)	(0.691)	(0.703)	(0.798)
ROA	-0.040**	-0.042**	-0.042**	-0.043**
	(0.017)	(0.013)	(0.012)	(0.011)
ROA×NEWS	1.636***	1.597***	1.413***	1.601***
	(0.000)	(0.000)	(0.000)	(0.000)
HORIZON	0.015***	0.015***	0.015***	0.015***
	(0.000)	(0.000)	(0.000)	(0.000)
HORIZON×NEWS	0.036	0.032	0.038	0.009
	(0.792)	(0.808)	(0.775)	(0.948)
Constant	-0.008	-0.006	-0.006	-0.005
	(0.462)	(0.578)	(0.583)	(0.618)
Year Fixed Effects	YES	YES	YES	YES
Observations	4,108	4,124	4,199	4,199
Adj R-squared	0.029	0.029	0.029	0.029

This table reports the results from regressing investors' reaction on each positional attribute (tenure, manager/chair duality, CEO's CFO experience, and charitable involvement), separately, over 2006-2014. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

4.6.4 Results for all Managerial Attributes (Hypothesis 3)

Table 21 reports the results for Hypothesis 3 when all manager attributes are included in the same model.

As discussed in Chapter 3, several manager attributes are correlated. Multicollinearity is an issue because the mean variance inflation factor (VIF) is 136.35 when all manager attributes are included in the same model. The maximum VIF is 4123.39 for NEWS. The other main culprits are AGE×NEWS which has a VIF of 3330.71 and NETWORK×NEWS which has a VIF of 202.51. Results when I exclude AGE and AGE×NEWS from the model are reported in Column 2 of Table 21 and results when I exclude NETWORK and NETWORK×NEWS from the model are reported in Column 3 of Table 21. Results when I exclude both AGE and NETWORK and their interactions with NEWS are reported in Column 4 of Table 21. The mean VIF after the two variables and their interactions are excluded from the model falls to 7.59. The maximum VIF is 112.04 for NEWS and SIZE×NEWS has a VIF of 36.33. Overall, this indicates high multicollinearity in the model.

From Column 1 in Table 21, it can be observed that when all manager attributes are included in the same model, most of the manager attributes interacted with forecast news are not statistically significant. Compared with results when manager attributes were examined individually, IVY×NEWS and CEO_CFO_EXPER×NEWS are no longer significant (see Table 18 and Table 20). However, similar to results in Table 18, when all manager attributes are examined jointly, the coefficient for LEGAL×NEWS is still positive and significant. This suggests that the market reaction per unit of forecast news is stronger for management earnings forecasts issued by managers with a legal background.

Table 21 Results for Hypothesis 3 (All manager attributes)

	(1)	(2)	(3)	(4)
VARIABLES	2006-2014 CAR(-1,1)			
NEWS	2.861	0.194	2.137	0.420
	(0.274)	(0.780)	(0.363)	(0.295)
SEX	0.001	0.001	0.004	0.004
	(0.867)	(0.866)	(0.526)	(0.538)
SEX×NEWS	-0.369	-0.376	-0.306	-0.311
	(0.114)	(0.108)	(0.140)	(0.134)
AGE	-0.000		0.008	
	(0.979)		(0.584)	
AGE×NEWS	-0.627		-0.417	
	(0.290)		(0.457)	
FIN_EXP	-0.000	-0.000	-0.000	-0.000
	(0.907)	(0.924)	(0.921)	(0.935)
FIN_EXP×NEWS	0.215	0.232*	0.374***	0.389***
	(0.104)	(0.078)	(0.002)	(0.001)
MBA	0.003	0.003	0.001	0.001
	(0.330)	(0.332)	(0.710)	(0.698)
MBA×NEWS	0.108	0.118	0.022	0.023
	(0.435)	(0.394)	(0.851)	(0.844)
LEGAL	0.001	0.001	0.001	0.001
	(0.917)	(0.918)	(0.843)	(0.865)
LEGAL×NEWS	0.765**	0.763**	0.757**	0.755**
	(0.011)	(0.011)	(0.010)	(0.010)
IVY	-0.004	-0.004	-0.001	-0.001
	(0.303)	(0.300)	(0.873)	(0.836)
IVY×NEWS	0.011	0.024	0.099	0.121
	(0.946)	(0.881)	(0.449)	(0.345)
MIL_EXPER	0.005	0.005	0.004	0.005
	(0.431)	(0.408)	(0.443)	(0.336)
MIL_EXPER×NEWS	0.212	0.148	0.280	0.244
	(0.358)	(0.506)	(0.179)	(0.230)
NETWORK	0.001	0.001		
	(0.793)	(0.798)		
NETWORK×NEWS	-0.032	-0.019		
	(0.704)	(0.815)		
M_ABILITY	0.004	0.004	0.007	0.007
	(0.364)	(0.359)	(0.130)	(0.144)
M_ABILITY×NEWS	0.165	0.189	0.214	0.228
	(0.359)	(0.289)	(0.202)	(0.171)
PRESS_COV	0.000	0.000	0.000	0.000
	(0.160)	(0.157)	(0.227)	(0.222)
PRESS_COV×NEWS	0.001	0.001	0.002**	0.002**
	(0.300)	(0.271)	(0.043)	(0.034)
AWARDS	-0.003	-0.003	-0.004*	-0.003*
	(0.119)	(0.115)	(0.055)	(0.058)
AWARDS×NEWS	-0.052	-0.067	-0.126	-0.139
	(0.593)	(0.489)	(0.171)	(0.125)
TENURE	0.000	0.001	0.001*	0.001*
	(0.334)	(0.321)	(0.091)	(0.066)
TENURE×NEWS	0.013	0.009	0.020	0.017
	(0.522)	(0.646)	(0.301)	(0.360)
MGR_CHAIR	0.005	0.005	0.003	0.003
	(0.193)	(0.188)	(0.384)	(0.405)
MGR_CHAIR×NEWS	-0.004	0.021	-0.065	-0.050
	(0.974)	(0.873)	(0.583)	(0.669)
CEO_CFO_EXPER	-0.003	-0.003	0.001	0.001
	(0.341)	(0.335)	(0.737)	(0.763)
CEO_CFO_EXPER×NEWS	-0.041	-0.056	-0.164	-0.169
	(0.770)	(0.689)	(0.179)	(0.166)

CHARITY	-0.016	-0.016	-0.020	-0.018
	(0.237)	(0.249)	(0.175)	(0.203)
CHARITY×NEWS	0.553	0.533	0.702	0.675
	(0.461)	(0.477)	(0.369)	(0.387)
RANK_FE_MGR_ACCU	0.001	0.001	0.001	0.001
	(0.430)	(0.431)	(0.522)	(0.498)
RANK_FE_MGR_ACCU×NEWS	0.027	0.023	-0.015	-0.020
	(0.604)	(0.663)	(0.742)	(0.666)
RANK_FE_MGR_FREQ	0.000	0.000	0.001	0.001
	(0.800)	(0.760)	(0.403)	(0.418)
RANK_FE_MGR_FREQ×NEWS	-0.049	-0.033	-0.090*	-0.081*
	(0.380)	(0.537)	(0.073)	(0.096)
RANK_FE_MGR_WIDTH	0.001	0.001	0.001	0.001
	(0.574)	(0.587)	(0.312)	(0.318)
RANK_FE_MGR_WIDTH×NEWS	0.011	0.005	-0.014	-0.017
	(0.844)	(0.921)	(0.779)	(0.726)
RANK_FE_FIRM_ACCU	0.005*	0.005*	0.002	0.002
	(0.070)	(0.066)	(0.439)	(0.401)
RANK_FE_FIRM_ACCU×NEWS	-0.041	-0.037	0.025	0.029
	(0.535)	(0.570)	(0.673)	(0.628)
RANK_FE_FIRM_FREQ	0.002	0.002	0.003*	0.003*
	(0.220)	(0.213)	(0.067)	(0.072)
RANK_FE_FIRM_FREQ×NEWS	0.101*	0.115**	0.104**	0.115**
	(0.062)	(0.028)	(0.040)	(0.018)
RANK_FE_FIRM_WIDTH	-0.000	-0.000	0.004**	0.004**
	(0.963)	(0.938)	(0.042)	(0.043)
RANK_FE_FIRM_WIDTH×NEWS	0.094	0.081	-0.099	-0.103
	(0.265)	(0.333)	(0.169)	(0.151)
SIZE	-0.004***	-0.004***	-0.003**	-0.003**
	(0.005)	(0.005)	(0.026)	(0.024)
SIZE×NEWS	-0.083	-0.078	-0.068*	-0.066*
	(0.104)	(0.126)	(0.089)	(0.095)
F_LOSS	-0.020**	-0.020**	-0.022**	-0.022**
	(0.040)	(0.036)	(0.013)	(0.013)
F_LOSS×NEWS	-0.060	-0.110	0.130	0.109
	(0.846)	(0.719)	(0.662)	(0.711)
ROA	-0.024	-0.023	-0.035*	-0.035*
	(0.277)	(0.283)	(0.071)	(0.068)
ROA×NEWS	-0.634	-0.524	1.637***	1.728***
	(0.293)	(0.377)	(0.000)	(0.000)
HORIZON	0.015***	0.015***	0.017***	0.017***
	(0.001)	(0.001)	(0.000)	(0.000)
HORIZON×NEWS	-0.045	-0.050	-0.021	-0.020
	(0.775)	(0.753)	(0.892)	(0.895)
Constant	-0.001	-0.003	-0.055	-0.024*
	(0.982)	(0.868)	(0.347)	(0.086)
Year Fixed Effects	YES	YES	YES	YES
Observations	2,691	2,691	3,340	3,340
Adj R-squared	0.011	0.012	0.041	0.041

This table reports the results from regressing investors' reaction to management earnings forecasts on each manager attributes in the same model. For Columns 1 and 2, the sample consists of 160 managers and 2,691 observations with available managerial attributes data for each attribute whose fixed effects are estimable between 1996-2013 and who provided forecasts during the test period of 2006-2014. For Columns 3 and 4, without the variable NETWORK, the sample size is 189 managers and 3,340 observations. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

Consistent with the results obtained for Hypothesis 1 (see Table 16), manager-specific fixed effects on forecast performance are not significant. The main effect for the firm-specific fixed effect on accuracy (RANK_FE_FIRM_ACCU) is positive and significant suggesting that the market reaction to the management earnings forecast release is stronger for firms with a historic propensity to issue accurate forecasts. The coefficient for RANK_FE_FIRM_FREQ×NEWS is positive and significant suggesting that the market reacts more strongly per unit of forecast news to management earnings forecasts issued by firms with a higher propensity to issue more frequent management earnings forecasts. Other control variables behave similarly to results obtained in previous analyses.

When AGE and AGE×NEWS are excluded from the model (Column 2), results are similar to those obtained in Column 1, with one exception. The coefficient for FIN_EXP×NEWS becomes positive and significant at the 10% level. When NETWORK and NETWORK×NEWS are excluded from the model (Column 3), the sample size increases to 3,340 management earnings forecasts provided by 189 managers. Compared to Column 1, it can be seen that when NETWORK and NETWORK×NEWS are excluded (Column 3), FIN_EXP×NEWS is positive and significant at the 1% level and PRESS_COV×NEWS is positive and significant at the 5% level. The coefficient on LEGAL×NEWS is still positive and significant. Similar results are obtained when both AGE and NETWORK and their interactions are excluded from the model (Column 4). The results suggest that the market reaction to each unit of forecast news is stronger for management earnings forecasts issued by managers with an accounting/finance background, a legal background and for managers who receive higher coverage by the press. The results from Columns 2 to 4 also imply that multicollinearity coupled with the small sample size could be possible reasons for the lack of significance on some managerial attributes. In addition, as seen in Columns 3 and 4, the main effect for

TENURE is positive and significant and the main effect for AWARDS is negative and significant at the 10% level. This suggests that the market reaction to management earnings forecasts issuance is stronger for longer tenured managers. However, market reaction to management earnings forecasts is weaker for managers who have won more awards. Prior research finds that, after winning awards, managers become more distracted (e.g. writing books) and subsequently underperform (Malmendier and Tate, 2009). Therefore, one possible reason for the counterintuitive result for AWARDS could be that the market is reacting to managers' underperformance.

4.6.5 Summary of Results for Hypothesis 3

Hypothesis 3 predicts that the market reaction to management earnings forecast news is conditioned by manager attributes. Because manager attributes are highly correlated, they are first examined individually. When examined individually, overall, with a few exceptions, there does not seem to be much evidence that the stock market reaction to management earnings forecasts varies with managers' personal, imputed and positional attributes. I find that the stock market reaction to each unit of management earnings forecast news is stronger for managers with a legal background and Ivy league education. I also find that the stock market reaction to each unit of management earnings forecast news is weaker for CEOs with CFO experience.

When all manager attributes are included in a single model, only legal background (LEGAL) is significant. Because of high collinearity when all variables are included in one model, I also estimated the regressions without AGE and NETWORK and their interaction with NEWS in Table 21. Results without these variables in the model indicate that in addition to legal

backgrounds, the stock market reaction to each unit of management earnings forecast news is stronger for managers with accounting/finance backgrounds and higher press coverage.

Results also consistently show that the stock market reaction to management earnings forecast news is stronger for firms with a higher propensity to issue frequent management earnings forecasts. This is consistent with the suggestion that firms who guide more frequently potentially spend more resources to build their credibility (Ying Wang and Tan, 2013).

4.7 Testing Hypothesis 4

Hypothesis 4 predicts that analyst reaction to management earnings forecasts is conditioned managers' personal, imputed and positional attributes. Similar to Section 4.6, because managers' attributes are correlated, I first examine whether the analyst reaction varies with each manager attribute separately and then include all manager attributes in the same model to test their effect on analyst reaction to management earnings forecasts. Section 4.7.1 provides the results for personal attributes. Section 4.7.2 reports the results for imputed attributes and Section 4.7.3 presents the results for positional attributes. Section 4.7.4 reports the results when all manager attributes are included in one model.

4.7.1 Results for Personal Attributes (Hypothesis 4)

The results for analysts' reaction against personal attributes are examined are reported in Table 22. Column 1 to 8 report results for sex, age, financial expertise, MBA education, legal background, Ivy league education, military experience and network size, respectively.

Table 22 Results for Hypothesis 4 (Personal attributes)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	2006-2014 AFREV M_ATTRIBUTES							
VARIABLES	**SEX**	**AGE**	**FIN_EXP**	**MBA**	**LEGAL**	**IVY**	**MIL_EXPER**	**NETWORK**
NEWS	-0.043*	0.133	-0.031	-0.043*	-0.035	-0.041*	-0.042*	-0.062*
	(0.060)	(0.255)	(0.205)	(0.063)	(0.132)	(0.080)	(0.069)	(0.098)
M_ATTRIBUTES	**0.000**	**-0.001***	**-0.000****	**0.000**	**0.000**	**-0.000**	**0.001***	**-0.000**
	(0.417)	**(0.076)**	**(0.035)**	**(0.984)**	**(0.669)**	**(0.532)**	**(0.068)**	**(0.849)**
M_ATTRIBUTES×NEWS	**-0.018****	**-0.043**	**-0.008**	**-0.012****	**0.032*****	**0.002**	**0.009**	**0.004**
	(0.049)	**(0.127)**	**(0.203)**	**(0.049)**	**(0.005)**	**(0.760)**	**(0.472)**	**(0.382)**
RANK_FE_MGR_ACCU	0.000	0.000*	0.000*	0.000	0.000	0.000	0.000*	0.000*
	(0.102)	(0.079)	(0.100)	(0.105)	(0.102)	(0.117)	(0.089)	(0.061)
RANK_FE_MGR_ACCU×NEWS	0.006**	0.007***	0.006**	0.006**	0.007**	0.005*	0.005*	0.005
	(0.023)	(0.009)	(0.024)	(0.030)	(0.011)	(0.064)	(0.058)	(0.123)
RANK_FE_MGR_FREQ	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.516)	(0.372)	(0.545)	(0.550)	(0.476)	(0.564)	(0.494)	(0.261)
RANK_FE_MGR_FREQ×NEWS	0.003	0.002	0.004	0.004	0.003	0.004	0.004	0.008***
	(0.324)	(0.423)	(0.115)	(0.127)	(0.255)	(0.161)	(0.140)	(0.008)
RANK_FE_MGR_WIDTH	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000**
	(0.356)	(0.334)	(0.245)	(0.248)	(0.309)	(0.296)	(0.360)	(0.030)
RANK_FE_MGR_WIDTH×NEWS	0.006**	0.005*	0.004	0.005*	0.004	0.006**	0.006**	0.007**
	(0.032)	(0.067)	(0.185)	(0.075)	(0.193)	(0.044)	(0.046)	(0.031)
RANK_FE_FIRM_ACCU	0.000**	0.000**	0.000*	0.000**	0.000**	0.000**	0.000**	0.000*
	(0.040)	(0.035)	(0.050)	(0.039)	(0.031)	(0.046)	(0.037)	(0.075)
RANK_FE_FIRM_ACCU×NEWS	0.004	0.003	0.003	0.006*	0.004	0.003	0.004	0.003
	(0.198)	(0.273)	(0.262)	(0.060)	(0.185)	(0.311)	(0.229)	(0.331)
RANK_FE_FIRM_FREQ	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.564)	(0.483)	(0.456)	(0.625)	(0.567)	(0.645)	(0.637)	(0.804)
RANK_FE_FIRM_FREQ×NEWS	0.021***	0.021***	0.021***	0.021***	0.021***	0.021***	0.021***	0.023***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
RANK_FE_FIRM_WIDTH	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.401)	(0.438)	(0.294)	(0.427)	(0.368)	(0.478)	(0.371)	(0.447)
RANK_FE_FIRM_WIDTH×NEWS	-0.001	-0.001	-0.002	-0.001	-0.001	0.000	-0.000	0.002
	(0.721)	(0.798)	(0.637)	(0.712)	(0.827)	(0.974)	(0.978)	(0.638)
SIZE	0.000	0.000	0.000	0.000	0.000	0.000*	0.000	0.000*
	(0.134)	(0.119)	(0.215)	(0.105)	(0.176)	(0.088)	(0.112)	(0.100)
SIZE×NEWS	-0.001	-0.002	-0.002	-0.001	-0.002	-0.002	-0.002	-0.003
	(0.679)	(0.445)	(0.387)	(0.520)	(0.305)	(0.455)	(0.451)	(0.238)

F_LOSS	-0.005***	-0.005***	-0.005***	-0.005***	-0.005***	-0.005***	-0.005***	-0.006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
F_LOSS×NEWS	0.115***	0.119***	0.120***	0.118***	0.119***	0.119***	0.119***	0.073***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
ROA	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002
	(0.370)	(0.489)	(0.361)	(0.315)	(0.298)	(0.365)	(0.363)	(0.270)
ROA×NEWS	0.040	0.036	0.051*	0.056**	0.058**	0.050*	0.049*	0.023
	(0.137)	(0.183)	(0.056)	(0.038)	(0.029)	(0.064)	(0.068)	(0.558)
HORIZON	0.000	0.000	0.000	-0.000	0.000	-0.000	-0.000	0.000
	(0.916)	(0.901)	(0.894)	(0.976)	(0.921)	(0.930)	(0.878)	(0.719)
HORIZON×NEWS	-0.024**	-0.022**	-0.022**	-0.027**	-0.021*	-0.026**	-0.026**	-0.047***
	(0.027)	(0.047)	(0.047)	(0.017)	(0.057)	(0.018)	(0.018)	(0.000)
Constant	-0.002***	0.004	-0.002*	-0.002***	-0.002**	-0.002***	-0.002***	-0.002*
	(0.008)	(0.277)	(0.053)	(0.007)	(0.012)	(0.006)	(0.006)	(0.055)
Year Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	4,052	4,052	4,052	4,010	4,052	4,010	4,015	3,227
Adj R-squared	0.103	0.103	0.103	0.102	0.103	0.101	0.102	0.105

This table reports the results from regressing analysts' reaction on each personal attribute (sex, age, financial expertise, MBA education, legal background, IVY league education, military experience, and network size), separately, over 2006-2014. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

As seen in Column 1, SEX×NEWS is negative and significant at the 5% level. This suggests that analysts' reaction per unit of management earnings forecast news is weaker for female managers. Results in Column 2 report that AGE×NEWS is not significant. However, there is a negative association between the main effect for AGE and the analyst reaction to management earnings forecast issuance. Similarly, as seen in Column 3, FIN_EXP×NEWS is not significant but FIN_EXP is negative and significant. Column 4 shows that there is a negative association between MBA×NEWS and analyst reaction to management earnings forecast suggesting that there is a weaker analyst reaction to each unit of forecast news provided by managers with MBAs. This implies that analysts view management earnings forecasts issued by MBA holding managers to be less credible. Similar to results obtained for Hypothesis 3, Column 5 shows that LEGAL×NEWS is positive and significant. This suggests that there is a stronger reaction to management earnings forecast news provided by managers with a legal background. Columns 6 to 9 show that there is no evidence that Ivy league education, military experience and network size matter to analysts in assessing the perceived credibility of management earnings forecasts.

As seen in Columns 1 to 7, similar to results obtained for Hypothesis 2, the interaction between RANK_FE_MGR_ACCU and NEWS is positive and significant suggesting that analysts view forecasts issued by managers with a historic propensity to provide accurate forecasts to be more credible. Similarly, the interaction between RANK_FE_MGR_WIDTH and NEWS is positive and significant consistent with the proposition that analysts perceive forecasts issued by managers who are more precise to be more credible. RANK_FE_FIRM_ACCU is still positive and significant and F_LOSS×NEWS is also positive and significant suggesting a stronger analyst reaction for forecasts predicting losses.

4.7.2 Results for Imputed Attributes (Hypothesis 4)

The results for whether imputed attributes matter in analysts' reaction to management earnings forecasts are reported in Table 23. Columns 1 to 3 report results for manager ability using the Demerjian et al. (2012) score, press coverage over the last five years and number of awards won by the manager as at the start of the financial period.

As seen in Column 1, M_ABILITY×NEWS is not significant. However, the main effect for the managerial ability score is positive and significant. This suggests a stronger analyst reaction for management earnings forecasts issued by higher ability managers. Similarly, as shown in Column 2, the interaction for press coverage and news is not significant but the main effect is negative and significant at the 10% level suggesting a weaker reaction to management earnings forecasts issued by managers with higher press coverage. Finally, as seen in Column 3, there is no evidence that analyst reaction to management earnings forecasts varies with the number of awards won by the manager.

Other variables of interest and control variables continue to behave as previously. Columns 1 to 3 of Table 23 show that the manager's fixed effects on accuracy (RANK_FE_MGR_ACCU) interacted with NEWS continues to be positive and significant. Consistent with Hypothesis 2, this suggests that analysts perceive management earnings forecasts news issued by managers with a historic propensity to issue more accurate forecasts to be more credible.

Table 23 Results for Hypothesis 4 (Imputed attributes)

	(1)	(2)	(3)
	2006-2014		
	AFREV		
	M_ATTRIBUTES		
VARIABLES	**M_ABILITY**	**PRESS_COV**	**AWARDS**
NEWS	-0.034	-0.049**	-0.042*
	(0.192)	(0.040)	(0.068)
M_ATTRIBUTES	**0.001****	**-0.000***	**-0.000**
	(0.010)	**(0.071)**	**(0.686)**
M_ATTRIBUTES×NEWS	**-0.003**	**-0.000**	**-0.000**
	(0.788)	**(0.382)**	**(0.862)**
RANK_FE_MGR_ACCU	0.000	0.000	0.000
	(0.308)	(0.147)	(0.110)
RANK_FE_MGR_ACCU×NEWS	0.007**	0.007**	0.006**
	(0.028)	(0.017)	(0.017)
RANK_FE_MGR_FREQ	-0.000	-0.000	-0.000
	(0.607)	(0.607)	(0.473)
RANK_FE_MGR_FREQ×NEWS	0.006*	0.004	0.003
	(0.067)	(0.186)	(0.232)
RANK_FE_MGR_WIDTH	-0.000	-0.000	-0.000
	(0.468)	(0.399)	(0.345)
RANK_FE_MGR_WIDTH×NEWS	0.006*	0.005*	0.005*
	(0.064)	(0.075)	(0.085)
RANK_FE_FIRM_ACCU	0.000**	0.000*	0.000**
	(0.040)	(0.062)	(0.050)
RANK_FE_FIRM_ACCU×NEWS	0.006*	0.004	0.004
	(0.091)	(0.193)	(0.229)
RANK_FE_FIRM_FREQ	0.000	-0.000	-0.000
	(0.900)	(0.750)	(0.584)
RANK_FE_FIRM_FREQ×NEWS	0.024***	0.022***	0.021***
	(0.000)	(0.000)	(0.000)
RANK_FE_FIRM_WIDTH	-0.000	-0.000	-0.000
	(0.319)	(0.567)	(0.414)
RANK_FE_FIRM_WIDTH×NEWS	-0.003	-0.001	-0.001
	(0.513)	(0.792)	(0.702)
SIZE	0.000	0.000**	0.000
	(0.576)	(0.039)	(0.105)
SIZE×NEWS	-0.003	-0.001	-0.001
	(0.291)	(0.664)	(0.602)
F_LOSS	-0.005***	-0.005***	-0.005***
	(0.000)	(0.000)	(0.000)
F_LOSS×NEWS	0.111***	0.117***	0.117***
	(0.000)	(0.000)	(0.000)
ROA	0.001	0.001	0.001
	(0.588)	(0.450)	(0.419)
ROA×NEWS	0.043	0.046*	0.046*
	(0.136)	(0.083)	(0.087)
HORIZON	-0.000	0.000	0.000
	(0.736)	(0.966)	(0.950)
HORIZON×NEWS	-0.040***	-0.022**	-0.023**
	(0.001)	(0.047)	(0.039)
Constant	-0.002**	-0.003***	-0.002***
	(0.014)	(0.002)	(0.008)
Year Fixed Effects	YES	YES	YES
Observations	3,438	4,035	4,052
Adj R-squared	0.102	0.103	0.102

This table reports the results from regressing analysts' reaction on each imputed attribute (managerial ability score, press coverage and number of awards won), separately, over 2006-2014. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

4.7.3 Results for Positional Attributes (Hypothesis 4)

The results for whether imputed attributes matter in analysts' reaction to management earnings forecasts are reported in Table 24 below. Columns 1 to 4 present the results for tenure, manager/chair duality, CEO's CFO experience and charitable involvement, respectively.

As seen in Column 1, TENURE×NEWS is positive and significant at the 10% level. This suggests that there is a stronger analyst reaction to each unit of management earnings forecast news issued by managers with longer tenures. Similarly, Column 2 shows that MGR_CHAIR is positive and significant suggesting that there is a stronger analyst reaction to each unit of forecast news issued by managers who are also the chairperson. Taken together, if tenure and manager/chair duality proxy for power, the results from Columns 1 and 2 imply that manager power seems to influence analyst reaction to management earnings forecasts.

Similar to results obtained from Hypothesis 3 (see Table 20), there is a negative association between CEO_CFO_EXPER×NEWS and the analyst reaction to management earnings forecast news. As previously discussed, possible reasons could be that this variable is proxying for lower quality disclosures (Matsunaga et al., 2013) or is biased towards younger managers given it has only been reliably measured by Execucomp after 2002. No significant results are obtained for the association between managers' charitable involvement and analyst reaction to management earnings forecasts.

Overall, compared to results obtained from the market reaction to management earnings forecasts (Hypothesis 3), it seems that managers' positional attributes matter to analysts in their assessments of the perceived credibility of managers' earnings forecasts.

Table 24 Results for Hypothesis 4 (Positional attributes)

	(1)	(2)	(3)	(4)
	2006-2014			
	AFREV			
	M_ATTRIBUTES			
VARIABLES	**TENURE**	**MGR_CHAIR**	**CEO_CFO_EXPER**	**CHARITY**
NEWS	-0.044*	-0.045**	-0.020	-0.042*
	(0.056)	(0.050)	(0.405)	(0.068)
M_ATTRIBUTES	**0.000***	**-0.000****	**0.000***	**-0.001**
	(0.068)	**(0.043)**	**(0.076)**	**(0.542)**
M_ATTRIBUTES×NEWS	**0.001***	**0.027*****	**-0.023*****	**0.046**
	(0.074)	**(0.000)**	**(0.001)**	**(0.354)**
RANK_FE_MGR_ACCU	0.000*	0.000	0.000	0.000*
	(0.076)	(0.134)	(0.170)	(0.089)
RANK_FE_MGR_ACCU×NEWS	0.008***	0.006**	0.006**	0.006**
	(0.004)	(0.033)	(0.025)	(0.020)
RANK_FE_MGR_FREQ	-0.000	-0.000	-0.000	-0.000
	(0.393)	(0.717)	(0.553)	(0.458)
RANK_FE_MGR_FREQ×NEWS	0.004	0.005*	0.002	0.003
	(0.159)	(0.098)	(0.503)	(0.223)
RANK_FE_MGR_WIDTH	-0.000	-0.000	-0.000	-0.000
	(0.271)	(0.273)	(0.380)	(0.306)
RANK_FE_MGR_WIDTH×NEWS	0.005	0.004	0.005	0.005*
	(0.111)	(0.129)	(0.110)	(0.089)
RANK_FE_FIRM_ACCU	0.000*	0.000*	0.000*	0.000**
	(0.098)	(0.054)	(0.051)	(0.040)
RANK_FE_FIRM_ACCU×NEWS	0.003	0.003	0.004	0.004
	(0.318)	(0.336)	(0.205)	(0.193)
RANK_FE_FIRM_FREQ	-0.000	-0.000	-0.000	-0.000
	(0.346)	(0.628)	(0.489)	(0.584)
RANK_FE_FIRM_FREQ×NEWS	0.022***	0.019***	0.020***	0.021***
	(0.000)	(0.000)	(0.000)	(0.000)
RANK_FE_FIRM_WIDTH	-0.000	-0.000	-0.000	-0.000
	(0.647)	(0.247)	(0.459)	(0.406)
RANK_FE_FIRM_WIDTH×NEWS	0.000	-0.000	-0.001	-0.002
	(0.967)	(0.901)	(0.823)	(0.632)
SIZE	0.000	0.000**	0.000*	0.000
	(0.108)	(0.045)	(0.084)	(0.121)
SIZE×NEWS	-0.002	-0.001	-0.003	-0.001
	(0.241)	(0.583)	(0.196)	(0.587)
F_LOSS	-0.005***	-0.005***	-0.005***	-0.005***
	(0.000)	(0.000)	(0.000)	(0.000)
F_LOSS×NEWS	0.114***	0.117***	0.120***	0.117***
	(0.000)	(0.000)	(0.000)	(0.000)
ROA	0.001	0.001	0.001	0.001
	(0.374)	(0.646)	(0.348)	(0.373)
ROA×NEWS	0.050*	0.053**	0.028	0.047*
	(0.062)	(0.048)	(0.307)	(0.078)
HORIZON	-0.000	0.000	0.000	0.000
	(0.829)	(0.822)	(0.976)	(0.943)
HORIZON×NEWS	-0.018	-0.022**	-0.019*	-0.023**
	(0.106)	(0.044)	(0.085)	(0.040)
Constant	-0.002***	-0.002***	-0.002***	-0.002***
	(0.006)	(0.007)	(0.006)	(0.008)
Year Fixed Effects	YES	YES	YES	YES
Observations	3,961	3,979	4,049	4,049
Adj R-squared	0.104	0.107	0.105	0.102

This table reports the results from regressing analysts' reaction on each positional attribute (tenure, manager/chair duality, CEO's CFO experience, and charitable involvement), separately, over 2006-2014. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

4.7.4 Results for all Managerial Attributes (Hypothesis 4)

Table 25 reports the results for Hypothesis 4 when all manager attributes are included in the same model. Column 1 of Table 25 report the results for Hypothesis 4 when all manager attributes are included in the same model. Similar to Table 21, mean VIF is high (maximum 3859.11 for NEWS) and AGE and NETWORK have high VIFs. The interaction between AGE and NEWS has a VIF of about 3119 and the interaction between NETWORK and NEWS has a VIF of about 190. Therefore, I also report results without these variables. Column 2 reports the results without AGE and AGE×NEWS. The mean VIF after AGE and its interaction with NEWS are excluded is 14.6. Column 3 reports the results without NETWORK and NETWORK×NEWS. The mean VIF after exclusion of NETWORK and NETWORK×NEWS is 126.6 (maximum VIF is 3648.12 for NEWS). Column 4 reports the results without AGE, NETWORK and their respective interactions with NEWS. The mean VIF after both variables are excluded is 7.54 (maximum VIF is 110.80 for NEWS).

As seen in Column 1, when all manager attributes are included, SEX×NEWS is not significant. This is different from results obtained above (see Table 22) where SEX×NEWS was negative and significant at the 10% level. One possible reason for the lack of significant results obtained in Table 25 for SEX×NEWS is that the variable is correlated with other manager attributes. AGE×NEWS is not significant but the main effect for AGE is significant. This is similar to results obtained when AGE was examined individually (see Table 22).

Table 25 Results for Hypothesis 4 (All manager attributes)

	(1)	(2)	(3)	(4)
	2006-2014			
VARIABLES	AFREV			
NEWS	0.280	0.004	0.330*	-0.019
	(0.176)	(0.938)	(0.066)	(0.550)
SEX	-0.000	-0.000	0.001	0.001*
	(0.892)	(0.954)	(0.119)	(0.090)
SEX×NEWS	-0.011	-0.010	0.004	0.004
	(0.570)	(0.572)	(0.785)	(0.791)
AGE	-0.003**		-0.003***	
	(0.022)		(0.008)	
AGE×NEWS	-0.065		-0.084**	
	(0.169)		(0.049)	
FIN_EXP	-0.000	-0.000	-0.000*	-0.000*
	(0.243)	(0.260)	(0.078)	(0.085)
FIN_EXP×NEWS	-0.000	0.002	0.007	0.010
	(0.993)	(0.850)	(0.464)	(0.264)
MBA	0.000	0.000	-0.000	-0.000
	(0.746)	(0.879)	(0.765)	(0.641)
MBA×NEWS	-0.023**	-0.023**	-0.012	-0.013
	(0.032)	(0.034)	(0.178)	(0.143)
LEGAL	-0.000	-0.000	-0.000	-0.000
	(0.713)	(0.838)	(0.433)	(0.506)
LEGAL×NEWS	-0.004	-0.005	-0.005	-0.006
	(0.870)	(0.829)	(0.829)	(0.789)
IVY	-0.000	-0.000	-0.000	0.000
	(0.178)	(0.289)	(0.871)	(0.879)
IVY×NEWS	0.000	0.002	-0.012	-0.007
	(0.974)	(0.891)	(0.246)	(0.463)
MIL_EXPER	0.001*	0.001	0.001*	0.001
	(0.053)	(0.194)	(0.058)	(0.223)
MIL_EXPER×NEWS	0.016	0.010	0.033**	0.027*
	(0.384)	(0.572)	(0.038)	(0.082)
NETWORK	0.000	-0.000		
	(0.994)	(0.912)		
NETWORK×NEWS	-0.005	-0.003		
	(0.477)	(0.594)		
M_ABILITY	0.001**	0.001**	0.001*	0.001**
	(0.043)	(0.017)	(0.087)	(0.040)
M_ABILITY×NEWS	-0.010	-0.008	-0.004	-0.001
	(0.484)	(0.597)	(0.745)	(0.923)
PRESS_COV	-0.000	-0.000	-0.000	-0.000
	(0.440)	(0.377)	(0.303)	(0.299)
PRESS_COV×NEWS	0.000	0.000	0.000	0.000
	(0.222)	(0.195)	(0.246)	(0.172)
AWARDS	0.000	0.000	0.000	-0.000
	(0.843)	(0.942)	(0.967)	(0.831)
AWARDS×NEWS	-0.011	-0.013*	-0.011	-0.014**
	(0.143)	(0.094)	(0.107)	(0.044)
TENURE	0.000***	0.000**	0.000***	0.000***
	(0.007)	(0.022)	(0.001)	(0.003)
TENURE×NEWS	-0.001	-0.002	0.001	0.000
	(0.364)	(0.255)	(0.487)	(0.730)
MGR_CHAIR	-0.000	-0.000	-0.001***	-0.001**
	(0.143)	(0.203)	(0.005)	(0.011)
MGR_CHAIR×NEWS	0.047***	0.050***	0.045***	0.049***
	(0.000)	(0.000)	(0.000)	(0.000)
CEO_CFO_EXPER	0.000	0.000	0.000	0.000
	(0.663)	(0.505)	(0.270)	(0.226)

CEO_CFO_EXPER×NEWS	-0.036***	-0.037***	-0.046***	-0.048***
	(0.001)	(0.001)	(0.000)	(0.000)
CHARITY	0.000	-0.000	-0.000	-0.000
	(0.906)	(0.908)	(0.995)	(0.772)
CHARITY×NEWS	0.030	0.032	0.041	0.042
	(0.614)	(0.593)	(0.490)	(0.475)
RANK_FE_MGR_ACCU	0.000	0.000	0.000	0.000
	(0.163)	(0.288)	(0.350)	(0.420)
RANK_FE_MGR_ACCU×NEWS	0.010**	0.010**	0.009**	0.008**
	(0.017)	(0.021)	(0.011)	(0.019)
RANK_FE_MGR_FREQ	-0.000	-0.000	-0.000	0.000
	(0.275)	(0.432)	(0.723)	(0.987)
RANK_FE_MGR_FREQ×NEWS	0.013***	0.015***	0.006	0.008**
	(0.004)	(0.001)	(0.103)	(0.027)
RANK_FE_MGR_WIDTH	-0.000*	-0.000*	-0.000	-0.000
	(0.087)	(0.073)	(0.495)	(0.455)
RANK_FE_MGR_WIDTH×NEWS	0.008*	0.008*	0.009**	0.008**
	(0.059)	(0.081)	(0.021)	(0.037)
RANK_FE_FIRM_ACCU	0.000	0.000	0.000	0.000
	(0.166)	(0.249)	(0.249)	(0.290)
RANK_FE_FIRM_ACCU×NEWS	0.011**	0.011**	0.007	0.008*
	(0.044)	(0.031)	(0.152)	(0.079)
RANK_FE_FIRM_FREQ	-0.000	-0.000	-0.000	-0.000
	(0.467)	(0.600)	(0.217)	(0.361)
RANK_FE_FIRM_FREQ×NEWS	0.025***	0.027***	0.021***	0.023***
	(0.000)	(0.000)	(0.000)	(0.000)
RANK_FE_FIRM_WIDTH	-0.000	-0.000	-0.000	-0.000
	(0.572)	(0.525)	(0.698)	(0.576)
RANK_FE_FIRM_WIDTH×NEWS	0.007	0.005	0.010*	0.008
	(0.322)	(0.474)	(0.083)	(0.144)
SIZE	0.000	0.000	0.000	0.000
	(0.433)	(0.216)	(0.371)	(0.237)
SIZE×NEWS	-0.011***	-0.010**	-0.011***	-0.010***
	(0.009)	(0.016)	(0.000)	(0.001)
F_LOSS	-0.005***	-0.005***	-0.005***	-0.005***
	(0.000)	(0.000)	(0.000)	(0.000)
F_LOSS×NEWS	0.075***	0.069***	0.119***	0.113***
	(0.002)	(0.005)	(0.000)	(0.000)
ROA	0.001	0.001	0.000	0.000
	(0.750)	(0.682)	(0.966)	(0.804)
ROA×NEWS	0.007	0.022	-0.002	0.019
	(0.877)	(0.644)	(0.957)	(0.560)
HORIZON	-0.000	-0.000	-0.000	-0.000
	(0.687)	(0.615)	(0.701)	(0.602)
HORIZON×NEWS	-0.060***	-0.061***	-0.035***	-0.035***
	(0.000)	(0.000)	(0.008)	(0.008)
Constant	0.009*	-0.002	0.009**	-0.002**
	(0.090)	(0.112)	(0.039)	(0.026)
Year Fixed Effects	YES	YES	YES	YES
Observations	2,612	2,612	3,249	3,249
Adj R-squared	0.130	0.128	0.130	0.128

This table reports the results from regressing analysts' reaction to management earnings forecasts on each manager attributes in the same model. For Columns 1 and 2, the sample consists of 158 managers and 2,612 observations with available managerial attributes data for each attribute whose fixed effects are estimable between 1996-2013 and who provided forecasts during the test period of 2006-2014. For Columns 3 and 4, without the variable NETWORK, the sample size is 188 managers and 3,249 observations. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

As seen in Column 2, when AGE and AGE×NEWS are excluded, the main effect for AWARDS×NEWS becomes negative and significant.[43] As previously discussed, prior research finds that, after winning awards, subsequently underperform (Malmendier and Tate, 2009). Therefore, one possible reason for the result for AGE and AWARDS is that these variables are capturing this underperformance and analysts are reacting accordingly. As seen in Columns 1 and 2, MBA×NEWS is negative and significant at the 5% level. This is similar to the results obtained when MBA was examined individually (see Table 22). However, when NETWORK and NETWORK×NEWS are excluded, MBA×NEWS is no longer significant. As seen in Columns 3 and 4, MIL_EXPER×NEWS, however, is positive and significant at the 5% level and FIN_EXP×NEWS is negative and significant at the 10% level, when NETWORK and NETWORK×NEWS are excluded from the model. These varying results can also be explained by the collinearity within the variables.

Some results are consistent across all four specifications. It can be seen in Columns 1 to 4 that the main effect for M_ABILITY is positive and significant under Columns 1 to 4. This suggests a stronger analyst reaction to management earnings forecasts issuance by higher ability managers. Similarly, TENURE is positive and significant suggesting a stronger reaction to issuance of management earnings forecasts issued by longer tenured managers. MGR_CHAIR×NEWS is positive and significant at the 1% level. This suggests that there is a stronger analyst reaction per unit of management earnings forecast news issued by managers who are also the chairperson. Contrary to intuition, there is a weaker analyst reaction to management earnings forecast news issued by CEOs who have CFO experience. As discussed

[43] AGE and AWARDS have a positive correlation of 0.20 (see Table 13).

earlier, one possible reason could be that this variable is capturing lower quality disclosures (Matsunaga et al., 2013) or proxying for younger managers with smaller networks.

Similar to results obtained for Hypothesis 2, RANK_FE_MGR_ACCU×NEWS is consistently positive and significant. This suggests that analysts perceive management earnings forecast news issued by managers with stronger forecast accuracy to be more credible. The interaction between RANK_FE_MGR_FREQ and NEWS is also positive and significant suggesting that analysts view managers who forecast more frequently to be more credible. The interaction between RANK_FE_MGR_WIDTH and NEWS is also positive and significant suggesting that analysts perceive management earnings forecast news issued by managers who provide more precise disclosures to be more credible. Finally, there is also evidence that analysts differentiate between the forecast performance of the manager and the firm. The interaction between RANK_FE_FIRM_ACCU and NEWS is positive and significant suggesting that firms with higher prior forecast accuracy are perceived to be more credible. Similarly, the interaction between RANK_FE_FIRM_FREQ and NEWS is positive and significant which suggests that analysts view management earnings forecast news issued by firms who forecast more frequently to be more credible. Control variables behave as in previous models.

4.7.5 Summary of Results for Hypothesis 4

Hypothesis 4 predicts that analyst reaction to management earnings forecasts will be conditioned by manager attributes. As with Hypothesis 3, because manager attributes are correlated, their associations with analyst reaction are first examined individually. When examined individually, some personal attributes are associated with analysts' reaction to

management earnings forecast news. The coefficients for SEX×NEWS and MBA×NEWS are negative and significant while LEGAL×NEWS is positive and significant. With regards to imputed attributes, when examined individually, there is a positive association between managerial ability and the reaction to the issuance of the management earnings forecast. However, the interaction with NEWS is not significant. Results for positional attributes show a positive association between the interaction of TENURE and NEWS as well as between MGR_CHAIR and NEWS. On the other hand, there is a significant and negative association between CEO_CFO_EXPER and NEWS.

When examined together in one model, results consistently show that there is a positive association between MGR_CHAIR×NEWS and analyst reaction and a negative association between CEO_CFO_EXPER×NEWS and analyst reaction to management earnings forecasts. This suggests that analysts perceive management earnings forecast news issued by managers who are also the chairperson to be more credible but perceive management earnings forecast news issued by CEOs who have CFO experience to be less credible.

4.8 Conclusion

Hypothesis 1 predicts a stronger stock market reaction to management earnings forecast news issued by managers with higher prior forecast accuracy, frequency and precision. In summary, the results are not supportive of Hypothesis 1. The market does not appear to react to manager-specific prior forecast performance. There is some evidence suggesting that the market reacts more strongly to firm-specific factors such as firm-specific prior forecast accuracy and frequency.

Hypothesis 2 predicts a non-directional association between manager-specific prior forecast performance and analyst reaction to management earnings forecast news. The results provide support for Hypothesis 2. Analyst reaction to management earnings forecast news is stronger for managers with a higher propensity to issue more accurate and precise forecasts. There is also evidence that analysts react more strongly to management earnings forecast news issued by firms who forecast more frequently.

Hypothesis 3 predicts that stock market reaction to management earnings forecasts is conditioned by managers' personal, imputed and positional attributes. Overall, the results do not provide support for Hypothesis 3. However, there is consistent evidence that the stock market reaction per unit of management earnings forecast news is stronger for forecasts issued by managers with a legal background. There is also some evidence that the market reaction to management earnings forecast news is stronger for managers with an accounting/finance background and with higher press coverage.

Hypothesis 4 predicts that analyst reaction to management earnings forecasts is conditioned by managers' personal, imputed and positional attributes. Overall, the results do not provide support for Hypothesis 4. However, there is evidence that the reaction to the issuance of the management earnings forecast is positively associated with managerial ability. However, this effect is not conditioned by the forecast news. There is consistent evidence that analysts react more strongly to management earnings forecast news issued by managers who are also the chairperson.

To examine the robustness of the results presented in Chapter 4, additional analyses are conducted in Chapter 5. Chapter 6 concludes this thesis.

CHAPTER 5 Additional Analyses

5.1 Introduction

This chapter provides further analyses. Section 5.2 provides the results for Hypotheses 1 and 2 using a categorical measure of forecast precision instead of width of the range because the latter is highly correlated with forecast accuracy. Section 5.3 examines the association between manager attributes and manager fixed effects. This section also provides the results for Hypotheses 3 and 4 when fixed effects are not included in the models. Section 5.4 examines whether results obtained for Hypotheses 1 and 2 are driven by the type of news released.

5.2 Using an Alternative Measure of Forecast Precision

In the previous chapter, forecast precision was calculated as the width of the range. Manager and firm fixed effects on forecast precision estimated based on this measure of forecast precision is highly correlated with manager and firm fixed effects on forecast accuracy. As seen in Table 12, manager fixed effects on accuracy and manager fixed effects on precision have a correlation of 0.42 while firm fixed effects on accuracy and firm fixed effects on precision have a correlation of 0.73.

Following Bamber et al. (2010), I use an alternative measure for forecast precision comprising an ordinal scale on which point forecasts are assigned 3 points, range forecasts are assigned 2 points and open-ended forecasts assigned 1 point. I follow the classification scheme provided

by Anilowski et al. (2007) to classify management earnings forecasts into point, range and open-ended estimates. I estimate Model 1 above using this forecast precision measure to estimate manager and firm fixed effects on forecast precision.

Table 26 provides the descriptive statistics for manager and firm fixed effects for forecast precision using this categorical measure of forecast precision. For ease of reading, I have also included descriptive statistics for the other measures of forecast performance (see Table 8). As previously, the sample includes 4,202 management earnings forecasts issued by 237 managers and 253 firms over the test period 2006-2014.

Table 26 Descriptive statistics for manager and firm fixed effects using the alternate forecast precision measure

Variable	N	Mean	1%	25%	Median	75%	99%	MIN	MAX	STDEV
FE_MGR_ACCU	237	0.002	-0.108	-0.007	0.002	0.011	0.093	-0.185	0.473	0.033
FE_FIRM_ACCU	253	-0.022	-0.162	-0.048	-0.027	-0.002	0.147	-0.292	0.341	0.054
FE_MGR_FREQ	237	-0.338	-6.231	-1.977	-0.249	1.259	7.211	-13.402	11.647	2.704
FE_FIRM_FREQ	253	1.644	-5.416	-0.574	1.726	3.890	9.053	-8.212	14.751	3.396
FE_MGR_WIDTH	237	0.000	-0.030	-0.001	0.000	0.002	0.019	-0.159	0.532	0.022
FE_FIRM_WIDTH	253	0.005	-0.018	-0.001	0.002	0.008	0.053	-0.023	0.110	0.012
FE_MGR_PRECI	237	0.028	-0.591	-0.044	0.015	0.068	0.927	-1.261	1.170	0.235
FE_FIRM_PRECI	253	-0.064	-1.086	-0.133	-0.084	-0.010	0.793	-1.302	1.270	0.262

Table 26 provides the descriptive statistics for manager and firm fixed effects for 4,202 management earnings forecasts provided by 237 managers and 253 firms during 2006-2014. FE_MGR_PRECI is the raw manager fixed effect estimate on forecast precision using the alternative categorical measure of forecast precision. FE_FIRM_PRECI is the raw firm fixed effect estimate on forecast precision using the alternative categorical measure of forecast precision. Other variable definitions are provided in Appendix A.

The mean manager fixed effect estimate on forecast precision using the categorical variable (FE_MGR_PRECI) is 0.028 and the median is 0.015. This is comparable to results obtained by Bamber et al. (2010). The mean and the median manager fixed effect estimate using the categorical measure of forecast precision are higher than when estimated using the width of the range. On the other hand, the mean and median firm fixed effects using this categorical forecast

precision measure are lower than when width of the range is used.

Hypothesis 1 predicts a positive association between manager-specific prior forecast performance and investor reaction to management earnings forecast news. The results for Hypothesis 1 using this alternative categorical measure of forecast precision to estimate fixed effects on forecast precision are reported in Columns 1 and 2 of Table 27. For ease of comparison, I include the results using width of the range reported previously (Table 16) in Column 1 and results using the categorical measure of forecast precision to estimate fixed effects are reported in Column 2.

Similar to results using the width of the range, it can be seen that when the categorical measure is used, the interaction between manager fixed effect on precision (RANK_FE_MGR_PRECI) and NEWS is not significant.[44] However, one difference is that using the previous measure of precision yielded a negative and significant coefficient for the interaction between RANK_FE_FIRM_WIDTH and NEWS but using the new measure results in the coefficient for RANK_FE_FIRM_PRECI×NEWS being not significant.

With the new measure, however, RANK_FE_FIRM_ACCU is positive and significant suggesting a stronger market reaction to the release of the management earnings forecast issued by firms with a higher propensity to issue accurate forecasts. This result is also consistent with the possibility of a collinearity problem between fixed effects estimates for accuracy and width of the range.

[44] No significant results (untabulated) are obtained when only manager and firm fixed effects for precision are examined.

Table 27 Results for Hypotheses 1 and 2 using the alternative forecast precision measure

		(1)	(2)	(3)	(4)
		2006-2014			
VARIABLES		CAR(-1,1)	CAR(-1,1)	AFREV	AFREV
NEWS	+	0.365	0.377	-0.042*	-0.027
		(0.223)	(0.299)	(0.069)	(0.325)
RANK_FE_MGR_ACCU	?	0.000	0.001	0.000	0.000
		(0.870)	(0.401)	(0.104)	(0.205)
RANK_FE_MGR_ACCU×NEWS	+	-0.019	-0.005	0.006**	0.008***
		(0.591)	(0.885)	(0.017)	(0.001)
RANK_FE_MGR_FREQ	?	-0.000	-0.000	-0.000	-0.000
		(0.897)	(0.987)	(0.481)	(0.457)
RANK_FE_MGR_FREQ×NEWS	+	0.012	0.001	0.003	0.002
		(0.745)	(0.967)	(0.211)	(0.388)
RANK_FE_MGR_WIDTH	?	0.002		-0.000	
		(0.189)		(0.324)	
RANK_FE_MGR_WIDTH×NEWS	+	-0.000		0.005*	
		(0.994)		(0.085)	
RANK_FE_MGR_PRECI			-0.001		-0.000
			(0.669)		(0.743)
RANK_FE_MGR_PRECI×NEWS			0.031		0.002
			(0.411)		(0.480)
RANK_FE_FIRM_ACCU	?	0.003	0.006***	0.000**	0.000**
		(0.102)	(0.000)	(0.040)	(0.032)
RANK_FE_FIRM_ACCU×NEWS	+	0.040	0.006	0.004	0.003
		(0.298)	(0.864)	(0.202)	(0.277)
RANK_FE_FIRM_FREQ	?	0.002**	0.002*	-0.000	-0.000
		(0.050)	(0.055)	(0.590)	(0.569)
RANK_FE_FIRM_FREQ×NEWS	+	0.139***	0.124***	0.021***	0.021***
		(0.000)	(0.001)	(0.000)	(0.000)
RANK_FE_FIRM_WIDTH	?	0.003*		-0.000	
		(0.095)		(0.389)	
RANK_FE_FIRM_WIDTH×NEWS	+	-0.091**		-0.001	
		(0.032)		(0.678)	
RANK_FE_FIRM_PRECI			-0.002		-0.000
			(0.140)		(0.472)
RANK_FE_FIRM_PRECI×NEWS			-0.019		-0.002
			(0.597)		(0.389)
SIZE	?	-0.003***	-0.003***	0.000	0.000
		(0.004)	(0.002)	(0.115)	(0.148)
SIZE×NEWS	?	-0.052**	-0.070***	-0.001	-0.002
		(0.044)	(0.006)	(0.542)	(0.366)
F_LOSS	?	-0.023***	-0.021***	-0.005***	-0.005***
		(0.005)	(0.009)	(0.000)	(0.000)
F_LOSS×NEWS	?	0.071	0.066	0.117***	0.117***
		(0.795)	(0.810)	(0.000)	(0.000)
ROA	?	-0.043**	-0.036**	0.001	0.001
		(0.011)	(0.030)	(0.405)	(0.501)
ROA×NEWS	+	1.603***	1.697***	0.047*	0.067**
		(0.000)	(0.000)	(0.078)	(0.010)
HORIZON	?	0.015***	0.015***	0.000	0.000
		(0.000)	(0.000)	(0.949)	(0.905)
HORIZON×NEWS	?	0.007	0.023	-0.023**	-0.022**
		(0.955)	(0.864)	(0.039)	(0.044)
Constant		-0.006	0.003	-0.002***	-0.002**
		(0.560)	(0.784)	(0.008)	(0.017)
Year Fixed Effects		YES	YES	YES	YES
Observations		4,202	4,202	4,052	4,052
Adj R-squared		0.028	0.027	0.102	0.101

This table provides the results for Hypotheses 1 and 2 when a categorical variable is used to measure forecast precision. The sample to test Hypothesis 1 includes 4,202 observations and 237 managers. The sample to test Hypothesis 2 includes 236 managers and 4,052 observations. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

Results for other variables are similar when the categorical forecast precision is used to estimate manager and firm fixed effects on forecast precision. The coefficient for RANK_FE_FIRM_FREQ interacted with NEWS is still positive and significant suggesting that the market reacts more strongly to management earnings forecast news issued by firms who issue management earnings forecast more frequently.

Hypothesis 2 predicts a positive association between manager-specific forecast performance and analyst reaction to management earnings forecasts. Column 4 of Table 27 reports the results for Hypothesis 2 using the categorical forecast precision measure to estimate fixed effects on forecast precision. For comparison purposes, Column 3 reports the results using the original width of the range measure (see Table 17). As seen in Column 3, the coefficient for RANK_FE_MGR_WIDTH×NEWS is positive and significant but when the categorical forecast precision measure is used, RANK_FE_MGR_PRECI interacted with NEWS is not significant. The results for the other predictors are comparatively similar.

Table 28 shows the results for Hypotheses 3 and 4 using the categorical measure of forecast precision. Columns 2 and 4 of Table 28 report the results for Hypotheses 3 and 4, respectively, when the categorical precision measure is used to estimate manager and firm fixed effects on forecast precision. For comparison purposes, Columns 1 and 3 provide the results for Hypotheses 3 and 4, respectively, using the original width of the range measure. As previously discussed, because of the high VIFs for AGE and NETWORK, I report the results without these two variables.

Table 28 Results for Hypotheses 3 and 4 using the alternative forecast precision measure

VARIABLES	(1) 2006-2014 WIDTH CAR(-1,1)	(2) 2006-2014 PRECI CAR(-1,1)	(3) 2006-2014 WIDTH AFREV	(4) 2006-2014 PRECI AFREV
NEWS	0.420	0.217	-0.019	-0.036
	(0.295)	(0.662)	(0.550)	(0.344)
SEX	0.004	0.003	0.001*	0.001*
	(0.538)	(0.592)	(0.090)	(0.082)
SEX×NEWS	-0.311	-0.289	0.004	0.006
	(0.134)	(0.165)	(0.791)	(0.703)
FIN_EXP	-0.000	-0.001	-0.000*	-0.000*
	(0.935)	(0.667)	(0.085)	(0.089)
FIN_EXP×NEWS	0.389***	0.433***	0.010	0.006
	(0.001)	(0.000)	(0.264)	(0.519)
MBA	0.001	0.000	-0.000	-0.000
	(0.698)	(0.909)	(0.641)	(0.629)
MBA×NEWS	0.023	0.078	-0.013	-0.014
	(0.844)	(0.505)	(0.143)	(0.103)
LEGAL	0.001	0.001	-0.000	-0.000
	(0.865)	(0.930)	(0.506)	(0.506)
LEGAL×NEWS	0.755**	0.764***	-0.006	-0.005
	(0.010)	(0.010)	(0.789)	(0.833)
IVY	-0.001	-0.000	0.000	0.000
	(0.836)	(0.956)	(0.879)	(0.967)
IVY×NEWS	0.121	0.135	-0.007	-0.008
	(0.345)	(0.290)	(0.463)	(0.439)
MIL_EXPER	0.005	0.005	0.001	0.001
	(0.336)	(0.327)	(0.223)	(0.207)
MIL_EXPER×NEWS	0.244	0.309	0.027*	0.031*
	(0.230)	(0.137)	(0.082)	(0.052)
M_ABILITY	0.007	0.007	0.001**	0.001**
	(0.144)	(0.129)	(0.040)	(0.043)
M_ABILITY×NEWS	0.228	0.182	-0.001	-0.002
	(0.171)	(0.277)	(0.923)	(0.877)
PRESS_COV	0.000	0.000	-0.000	-0.000
	(0.222)	(0.188)	(0.299)	(0.271)
PRESS_COV×NEWS	0.002**	0.003**	0.000	0.000
	(0.034)	(0.026)	(0.172)	(0.135)
AWARDS	-0.003*	-0.003*	-0.000	-0.000
	(0.058)	(0.058)	(0.831)	(0.848)
AWARDS×NEWS	-0.139	-0.153*	-0.014**	-0.013*
	(0.125)	(0.093)	(0.044)	(0.051)
TENURE	0.001*	0.001*	0.000***	0.000***
	(0.066)	(0.065)	(0.003)	(0.002)
TENURE×NEWS	0.017	0.022	0.000	0.000
	(0.360)	(0.228)	(0.730)	(0.890)
MGR_CHAIR	0.003	0.001	-0.001**	-0.001***
	(0.405)	(0.739)	(0.011)	(0.009)
MGR_CHAIR×NEWS	-0.050	-0.012	0.049***	0.046***
	(0.669)	(0.914)	(0.000)	(0.000)
CEO_CFO_EXPER	0.001	0.000	0.000	0.000
	(0.763)	(0.910)	(0.226)	(0.174)
CEO_CFO_EXPER×NEWS	-0.169	-0.209*	-0.048***	-0.053***
	(0.166)	(0.096)	(0.000)	(0.000)
CHARITY	-0.018	-0.009	-0.000	0.000
	(0.203)	(0.543)	(0.772)	(0.978)
CHARITY×NEWS	0.675	0.503	0.042	0.034
	(0.387)	(0.522)	(0.475)	(0.572)
RANK_FE_MGR_ACCU	0.001	0.002	0.000	0.000
	(0.498)	(0.160)	(0.420)	(0.537)
RANK_FE_MGR_ACCU×NEWS	-0.020	-0.010	0.008**	0.012***

	(0.666)	(0.824)	(0.019)	(0.001)
RANK_FE_MGR_FREQ	0.001	0.001	0.000	0.000
	(0.418)	(0.363)	(0.987)	(0.980)
RANK_FE_MGR_FREQ×NEWS	-0.081*	-0.091*	0.008**	0.008**
	(0.096)	(0.060)	(0.027)	(0.023)
RANK_FE_MGR_WIDTH	0.001		-0.000	
	(0.318)		(0.455)	
RANK_FE_MGR_WIDTH×NEWS	-0.017		0.008**	
	(0.726)		(0.037)	
RANK_FE_MGR_PRECI		-0.001		-0.000
		(0.389)		(0.344)
RANK_FE_MGR_PRECI×NEWS		0.046		0.006
		(0.401)		(0.119)
RANK_FE_FIRM_ACCU	0.002	0.006***	0.000	0.000
	(0.401)	(0.001)	(0.290)	(0.173)
RANK_FE_FIRM_ACCU×NEWS	0.029	-0.014	0.008*	0.012***
	(0.628)	(0.771)	(0.079)	(0.003)
RANK_FE_FIRM_FREQ	0.003*	0.002	-0.000	-0.000
	(0.072)	(0.129)	(0.361)	(0.390)
RANK_FE_FIRM_FREQ×NEWS	0.115**	0.114**	0.023***	0.024***
	(0.018)	(0.019)	(0.000)	(0.000)
RANK_FE_FIRM_WIDTH	0.004**		-0.000	
	(0.043)		(0.576)	
RANK_FE_FIRM_WIDTH×NEWS	-0.103		0.008	
	(0.151)		(0.144)	
RANK_FE_FIRM_PRECI		-0.003*		-0.000
		(0.072)		(0.143)
RANK_FE_FIRM_PRECI×NEWS		0.045		0.005
		(0.405)		(0.229)
SIZE	-0.003**	-0.003**	0.000	0.000
	(0.024)	(0.015)	(0.237)	(0.311)
SIZE×NEWS	-0.066*	-0.097***	-0.010***	-0.009***
	(0.095)	(0.005)	(0.001)	(0.001)
F_LOSS	-0.022**	-0.021**	-0.005***	-0.005***
	(0.013)	(0.020)	(0.000)	(0.000)
F_LOSS×NEWS	0.109	0.071	0.113***	0.112***
	(0.711)	(0.812)	(0.000)	(0.000)
ROA	-0.035*	-0.028	0.000	0.000
	(0.068)	(0.134)	(0.804)	(0.817)
ROA×NEWS	1.728***	1.654***	0.019	0.041
	(0.000)	(0.000)	(0.560)	(0.190)
HORIZON	0.017***	0.017***	-0.000	-0.000
	(0.000)	(0.000)	(0.602)	(0.628)
HORIZON×NEWS	-0.020	-0.013	-0.035***	-0.033**
	(0.895)	(0.930)	(0.008)	(0.013)
Constant	-0.024*	-0.008	-0.002**	-0.002*
	(0.086)	(0.580)	(0.026)	(0.096)
Year Fixed Effects	YES	YES	YES	YES
Observations	3,340	3,340	3,249	3,249
Adj R-squared	0.041	0.040	0.128	0.127

This table provides the results for Hypotheses 3 and 4 when a categorical variable is used to measure forecast precision. The sample to test Hypothesis 3 includes 3,340 observations and 189 managers. The sample to test Hypothesis 4 includes 188 managers and 3,249 observations. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

Hypothesis 3 predicts that the market reaction to management earnings forecasts is conditioned by manager attributes. Tests for Hypothesis 3 reveal that the manager specific effect on forecast precision is not significant under either specification. When comparing results for Hypothesis 3 in Columns 1 and 2, it can also be seen that using the categorical version of the forecast precision measure results in a few differences in the results for Hypothesis 3. The coefficients for AWARDS×NEWS and CEO_CFO_EXPER×NEWS were previously not significant but become negative and significant. In addition, RANK_FE_FIRM_ACCU was previously not significant becomes positive and significant. RANK_FE_FIRM_FREQ was previously significant at the 10% level but is no longer significant when the categorical measure for forecast precision is used. The main effect for RANK_FE_FIRM_WIDTH is positive and significant but when the categorical variable is used, RANK_FE_FIRM_PRECI is negative and significant. This coupled with the differences in the results for the other results suggest a multicollinearity problem which causes the results to be unstable. However, some results are consistent across specifications. The coefficients for FIN_EXP×NEWS, LEGAL×NEWS and PRESS_COV×NEWS remain positive and significant suggesting a stronger market reaction for management earnings forecast news issued by managers who have accounting/finance backgrounds, legal backgrounds and higher press coverage, respectively.

Hypothesis 4 predicts that analysts' reaction to management earnings forecasts is conditioned by manager attributes. Results using the two different measures of forecast precision are reported in Columns 3 and 4. Results across the two specifications are similar. However, the results using the categorical measure of precision leads to the interaction between NEWS and RANK_FE_MGR_ACCU to be significant at the 1% level instead of at the 5% level. Similarly, results for the coefficient of RANK_FE_FIRM_ACCU×NEWS becomes significant at the 1% level using the new measure instead of the 10% level.

Overall, I test Hypotheses 1 to 4 using fixed effects based a categorical measure of forecast precision because fixed effects estimates based on the width of the range precision measure is highly correlated with fixed effects estimates of forecast accuracy. Using the new measure results in some differences in the results for market reaction to management earnings forecasts. This could be due to multicollinearity. Consistent with the main results, firm-specific forecast performance seems to matter more to the market. However, the market seems to view management earnings forecasts issued by managers with an accounting/finance background or a legal background to be more credible. The results for analyst reaction to management earnings forecasts and the effect of manager-specific forecast performance and manager attributes are more consistent across specifications.

5.3 The Association between Manager Attributes and Manager Fixed Effects

As discussed in Chapter 2, Bamber et al. (2010) find that some manager attributes (age, financial expertise, legal background, military experience and an MBA education) are associated with manager fixed effects on prior forecast performance. In this thesis, I examine the following additional manager attributes: sex, Ivy league education, network size, managerial ability, press citations, number of awards, tenure, manager/chair duality, CEO's CFO experience, and charitable involvement. Therefore, I follow Bamber (2010) and test whether manager attributes are associated with manager-specific fixed effects on prior forecast performance. To that end, the following model will be estimated:

$$RANK\_FE\_MGR\_PERF_m = \delta + \sum \delta_m M\_ATTRIBUTES_m + \varepsilon_{it}$$

RANK_FE_MGR_PERF$_m$ are the quartile ranks of manager-specific effects on prior forecast accuracy (RANK_FE_MGR_ACCU), frequency (RANK_FE_MGR_FREQ) and precision (RANK_FE_MGR_WIDTH) estimated in Model 1 (see Table 5). M_ATTRIBUTES are manager attributes, summarised in Table 6 in Chapter 3 and in Appendix A.

Table 29 reports the results for the relationship between manager attributes and manager-fixed effects on forecast performance. The sample includes all managers with data available to estimate fixed effects and who provided management earnings forecasts during 2006-2014 and for which data for all manager attributes is available. It includes 2,691 observations and 160 managers. Columns 1 to 3 show the results for manager fixed effects on accuracy, frequency and precision, respectively. It can be seen that most managerial attributes are associated with managers' fixed effect on forecast performance.

There is some evidence that personal attributes of managers are associated with managers' forecast performance. SEX is negatively associated with all three measures of fixed effects suggesting that female managers provide less accurate, frequent and precise forecasts. AGE is positively associated with accuracy and precision but negatively associated with frequency. This suggests that older managers provide more accurate and precise forecasts but less frequently. Bamber et al (2010) find no significant association for accuracy and precision but find similar to results obtained in Table 29 for the negative association between age and forecast frequency. FIN_EXP and MBA are positive and significantly associated with manager forecast frequency only. This suggests that managers who have more financial expertise are more likely to provide more frequent forecasts. However, there is no evidence that they provide more accurate or precise forecasts.

Table 29 The relationship between manager attributes and manager-fixed effects on forecast performance

	(1)	(2)	(3)
VARIABLES	RANK_FE_MGR_ACCU	RANK_FE_MGR_FREQ	RANK_FE_MGR_WIDTH
SEX	-0.220**	-0.906***	-0.258***
	(0.019)	(0.000)	(0.009)
AGE	1.130***	-0.882***	0.777***
	(0.000)	(0.000)	(0.000)
FIN_EXP	0.065	0.413***	0.026
	(0.161)	(0.000)	(0.594)
MBA	-0.074	0.079*	-0.031
	(0.110)	(0.098)	(0.527)
LEGAL	0.449***	-0.283***	0.322***
	(0.000)	(0.007)	(0.003)
IVY	0.145***	0.283***	-0.007
	(0.010)	(0.000)	(0.900)
MIL_EXPER	-0.372***	0.518***	-0.716***
	(0.000)	(0.000)	(0.000)
NETWORK	-0.271***	0.011	-0.060**
	(0.000)	(0.713)	(0.044)
M_ABILITY	0.031	0.393***	-0.042
	(0.631)	(0.000)	(0.541)
PRESS_COV	-0.000	0.002***	-0.000
	(0.669)	(0.000)	(0.483)
AWARDS	0.026	-0.065**	0.053**
	(0.305)	(0.012)	(0.044)
TENURE	-0.010	0.012	-0.006
	(0.167)	(0.102)	(0.384)
MGR_CHAIR	-0.167***	0.145***	-0.019
	(0.000)	(0.003)	(0.708)
CEO_CFO_EXP	0.327***	-0.285***	0.085*
	(0.000)	(0.000)	(0.099)
CHARITY	1.315***	0.776***	0.488**
	(0.000)	(0.000)	(0.016)
Constant	-0.290	5.252***	-0.131
	(0.718)	(0.000)	(0.876)
Observations	2,691	2,691	2,691
Adj R-squared	0.105	0.117	0.042

This table reports the results when manager-fixed effects on forecast performance is regressed against all managerial attributes. The sample is comprised of 2.691 management earnings forecasts issued by 160 managers. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

LEGAL is positively associated with accuracy and precision but negatively associated with frequency, suggesting that managers with legal backgrounds are likely to provide less frequent but more accurate and precise management earnings forecasts. These results are inconsistent with Bamber et al. (2010), who do not find significant results for the association between managers with legal backgrounds and forecast performance. IVY is positively associated with accuracy and frequency but not with precision, implying that managers who went to a more prestigious college are more likely to issue more accurate and frequent forecasts. MIL_EXPER is positively associated with frequency but negatively associated with accuracy and precision. These results are inconsistent with Bamber et al. (2010) who only finds a positive association between military experience and forecast precision. M_ABILITY and PRESS_COV are positively associated with only forecast frequency. The coefficient for AWARDS is negatively associated with forecast frequency but positively associated with forecast precision. MGR_CHAIR duality is negatively associated with forecast accuracy but positively associated with forecast frequency. CEO_CFO_EXPER is positively associated with accuracy and precision but negatively associated with frequency. Finally, charitable involvement is positively associated with all three forecast performance measures.

Overall, manager attributes help to predict managers' forecast accuracy, frequency and precision. Therefore, I run the results for Hypotheses 3 to 4 without the fixed effects to estimate the effects of managerial attributes on market and analyst reaction to management earnings forecast news. Results are reported in Table 30.

Table 30 Results for Hypothesis 3 and 4 (Excluding fixed effects)

VARIABLES	(1) CAR(-1,1)	(2) CAR(-1,1)	(3) AFREV	(4) AFREV
NEWS	5.402***	0.788***	1.081***	0.130***
	(0.004)	(0.001)	(0.000)	(0.000)
SEX	0.005	0.003	0.000	0.001**
	(0.399)	(0.571)	(0.786)	(0.036)
SEX×NEWS	-0.113	-0.159	-0.024	-0.007
	(0.538)	(0.284)	(0.139)	(0.590)
AGE	-0.006		-0.001	
	(0.630)		(0.360)	
AGE×NEWS	-1.102***		-0.217***	
	(0.010)		(0.000)	
FIN_EXP	-0.002	-0.004*	-0.000*	-0.001**
	(0.552)	(0.078)	(0.093)	(0.016)
FIN_EXP×NEWS	0.032	0.101	-0.015*	-0.008
	(0.721)	(0.200)	(0.054)	(0.253)
MBA	0.003	-0.000	0.000	-0.000
	(0.323)	(0.908)	(0.466)	(0.752)
MBA×NEWS	-0.070	0.002	-0.010	0.014**
	(0.462)	(0.980)	(0.216)	(0.043)
LEGAL	0.003	0.007	0.000	0.000
	(0.610)	(0.266)	(0.515)	(0.430)
LEGAL×NEWS	0.398*	0.563**	-0.027	-0.007
	(0.072)	(0.011)	(0.162)	(0.709)
IVY	-0.008**	-0.002	-0.001**	-0.000
	(0.014)	(0.491)	(0.022)	(0.596)
IVY×NEWS	0.065	0.086	0.025**	0.009
	(0.582)	(0.408)	(0.015)	(0.294)
MIL_EXPER	0.002	0.002	0.001	0.000
	(0.630)	(0.619)	(0.115)	(0.341)
MIL_EXPER×NEWS	0.115	0.031	0.043***	0.029**
	(0.530)	(0.855)	(0.009)	(0.036)
NETWORK	0.004**		0.000	
	(0.014)		(0.485)	
NETWORK×NEWS	-0.091		-0.009	
	(0.152)		(0.107)	
M_ABILITY	0.009**	0.011***	0.001**	0.001***
	(0.036)	(0.005)	(0.014)	(0.005)
M_ABILITY×NEWS	0.160	0.089	0.002	-0.001
	(0.268)	(0.502)	(0.892)	(0.914)
PRESS_COV	0.000	0.000	-0.000	-0.000
	(0.391)	(0.385)	(0.332)	(0.331)
PRESS_COV×NEWS	-0.000	0.001	0.000*	0.000*
	(0.995)	(0.197)	(0.063)	(0.054)
AWARDS	-0.002	-0.003	0.000	-0.000
	(0.131)	(0.118)	(0.748)	(0.823)
AWARDS×NEWS	0.029	-0.073	-0.007	-0.013**
	(0.692)	(0.302)	(0.272)	(0.030)
TENURE	0.000	0.001	0.000**	0.000**
	(0.285)	(0.193)	(0.035)	(0.026)
TENURE×NEWS	0.010	0.001	0.004***	0.004***
	(0.449)	(0.944)	(0.000)	(0.000)
MGR_CHAIR	0.002	0.001	-0.000*	-0.000*
	(0.548)	(0.748)	(0.069)	(0.082)
MGR_CHAIR×NEWS	0.070	0.089	0.012	0.025***
	(0.465)	(0.309)	(0.146)	(0.001)
CEO_CFO_EXPER	-0.003	0.001	0.000	0.000
	(0.340)	(0.817)	(0.849)	(0.933)

CEO_CFO_EXPER×NEWS	-0.085	-0.394***	0.009	-0.031***
	(0.428)	(0.000)	(0.364)	(0.000)
CHARITY	-0.007	-0.005	-0.000	-0.000
	(0.552)	(0.705)	(0.751)	(0.885)
CHARITY×NEWS	0.905	0.781	0.069	0.075
	(0.218)	(0.319)	(0.291)	(0.256)
SIZE	-0.003***	-0.002*	0.000	0.000*
	(0.007)	(0.078)	(0.233)	(0.096)
SIZE×NEWS	-0.047	-0.090***	-0.010***	-0.009***
	(0.127)	(0.000)	(0.000)	(0.000)
F_LOSS	-0.013	-0.016**	-0.004***	-0.005***
	(0.108)	(0.036)	(0.000)	(0.000)
F_LOSS×NEWS	0.186	0.495*	0.132***	0.206***
	(0.510)	(0.063)	(0.000)	(0.000)
ROA	-0.013	-0.021	0.002	0.003*
	(0.445)	(0.166)	(0.257)	(0.054)
ROA×NEWS	-0.543	2.179***	0.035	0.103***
	(0.232)	(0.000)	(0.386)	(0.000)
HORIZON	0.012***	0.015***	-0.000	-0.000
	(0.001)	(0.000)	(0.698)	(0.904)
HORIZON×NEWS	-0.095	-0.053	-0.119***	-0.092***
	(0.354)	(0.602)	(0.000)	(0.000)
Constant	0.007	-0.005	0.000	-0.003***
	(0.896)	(0.544)	(0.987)	(0.000)
Year Fixed Effects	YES	YES	YES	YES
Observations	3,843	4,932	3,746	4,809
Adj R-squared	0.013	0.036	0.111	0.119

This table provides the results for Hypotheses 3 and 4 excluding fixed effects on forecast performance. Columns 1 and 2 provide the results for Hypothesis 3 with Column 1 including all manager attributes and Column 2 excluding AGE and NETWORK and their interactions with NEWS. Columns 3 and 4 provide the results for Hypothesis 4 when manager and firm fixed effects are excluded. Column 3 includes all manager attributes and Column 4 excludes AGE and NETWORK and their interaction with NEWS. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

Results for Hypothesis 3 when manager and firm fixed effects are excluded are similar to those obtained in Section 4.6. One notable exception is AGE×NEWS which was not significant in main tests but is now negative and significant. As previously reported, this could be due to the high VIF obtained for AGE×NEWS (2654.62 in this model). Column 2 reports results for Hypothesis 3 excluding AGE and NETWORK and their interactions with NEWS. It can be seen that similar to results obtained in the main tests, LEGAL×NEWS is positive and significant when manager and firm fixed effects are excluded from the model. This suggests that the market views management earnings forecast news issued by managers with legal backgrounds to be more credible. Results for Hypothesis 4 (Columns 3 and 4) when manager and firm fixed effects are excluded from the model are also comparable to the main tests (see

Section 4.7). Two notable exceptions are MBA×NEWS and TENURE×NEWS which are now positive and significant. Overall, while the manager attributes are correlated with manager fixed effects, the results for manager attributes when fixed effects are excluded from the model are comparable to results obtained when manager fixed effects are included.

5.4 Results for Hypothesis 1 and 2: Good News and Bad News

Bad news management earnings forecasts are forecasts which fall below earnings expectations. Good news management earnings forecasts are forecasts which are above earnings expectations. Prior research finds a stronger reaction to bad news as compared to good news. Some studies argue that this is because bad news is more credible than good news (Jennings, 1987, Hutton et al., 2003, Rogers and Stocken, 2005). However, Kothari et al. (2009) argue that managers delay recognition of bad news and good news is frequently leaked early. Regardless whether bad news management earnings forecasts are more credible or released with a delay, I re-examine Hypotheses 1 and 2 by testing whether the association between market and analyst reaction to manager-specific forecast performance is conditioned by the type of news released. The descriptive statistics about the distribution of good news and bad news are provided in Table 31.

Table 31 Descriptive Statistics for Good News and Bad News

Panel A: Descriptive statistics using CAR as a dependent variable										
Variable	N	Mean	1%	0.25	Median	75%	0.99	MIN	MAX	STD DEV
GOOD_NEWS	1,928	0.016	0.000	0.002	0.007	0.020	0.125	0.000	0.341	0.025
BAD_NEWS	2,263	-0.017	-0.137	-0.019	-0.007	-0.002	0.000	-0.433	0.000	0.032
Panel B: Descriptive statistics using AFREV as a dependent variable										
Variable	N	Mean	1%	0.25	Median	75%	0.99	MIN	MAX	STD DEV
GOOD_NEWS	1,871	0.017	0.000	0.002	0.008	0.020	0.128	0.000	0.341	0.026
BAD_NEWS	2,171	-0.017	-0.135	-0.019	-0.007	-0.002	0.000	-0.433	0.000	0.032

This table provides the descriptive statistics about the distribution of NEWS when it is broken down into GOOD_NEWS and BAD_NEWS. GOOD_NEWS is equal to NEWS when NEWS is greater than zero. BAD_NEWS is equal to NEWS when NEWS is less than zero. Panel A and Panel B provide the distribution for GOOD_NEWS and BAD_NEWS when market reaction and analyst reaction are tested, respectively.

GOOD_NEWS is equal to NEWS if NEWS is greater than 0, and zero otherwise. BAD_NEWS is equal to NEWS if NEWS is less than 0, and zero otherwise. Table 31 Panel A and Panel B report the descriptive statistics for good news and bad news when Hypothesis 1 and Hypothesis 2 are tested, respectively. On average, the sample includes more good news forecasts than bad news forecasts, consistent with Rogers and Van Buskirk (2013).

Table 32 reports the results for Hypotheses 1 (Column 1) and 2 (Column 2) when good news and bad news are examined separately. As seen previously in Table 16, the market reaction to management earnings forecasts news does not seem to vary with manager-specific prior forecast performance. However, it can be seen that when the effect of good news and bad news are examined separately in Table 32 below, the interaction between RANK_FE_MGR_FREQ and GOOD_NEWS is positive at the 10% level suggesting that there is a stronger reaction per unit of good news for management earnings forecast issued by managers with a propensity to issue more frequent forecasts. In addition, RANK_FE_MGR_WIDTH×GOOD_NEWS is positive and significant suggesting a stronger market reaction per unit of good news for managers with a historic propensity to issue more precise forecasts. The coefficient for the RANK_FE_MGR_WIDTH and BAD_NEWS is negative and significant suggesting a weaker stock market reaction per unit of bad news issued by managers with a historic propensity to issue more precise forecasts.

Table 32 Results for Hypotheses 1 and 2 (Good news and bad news)

VARIABLES	(1) 2006-2014 CAR(-1,1)	(2) 2006-2014 AFREV
GOOD_NEWS	-1.338**	-0.070
	(0.037)	(0.131)
BAD_NEWS	1.049***	0.010
	(0.010)	(0.755)
RANK_FE_MGR_ACCU	0.001	0.000*
	(0.673)	(0.066)
RANK_FE_MGR_ACCU×GOOD_NEWS	-0.026	0.003
	(0.696)	(0.542)
RANK_FE_MGR_ACCU×BAD_NEWS	0.000	0.010**
	(0.998)	(0.014)
RANK_FE_MGR_FREQ	-0.001	-0.000
	(0.355)	(0.452)
RANK_FE_MGR_FREQ×GOOD_NEWS	0.115*	-0.001
	(0.072)	(0.863)
RANK_FE_MGR_FREQ×BAD_NEWS	-0.021	0.003
	(0.707)	(0.444)
RANK_FE_MGR_WIDTH	-0.000	-0.000
	(0.757)	(0.454)
RANK_FE_MGR_WIDTH×GOOD_NEWS	0.131**	0.004
	(0.032)	(0.332)
RANK_FE_MGR_WIDTH×BAD_NEWS	-0.119**	0.005
	(0.041)	(0.255)
RANK_FE_FIRM_ACCU	0.004**	0.000
	(0.044)	(0.137)
RANK_FE_FIRM_ACCU×GOOD_NEWS	-0.088	0.000
	(0.369)	(0.947)
RANK_FE_FIRM_ACCU×BAD_NEWS	0.078	0.000
	(0.140)	(0.938)
RANK_FE_FIRM_FREQ	0.001	-0.000
	(0.368)	(0.744)
RANK_FE_FIRM_FREQ×GOOD_NEWS	0.207***	0.018***
	(0.004)	(0.001)
RANK_FE_FIRM_FREQ×BAD_NEWS	0.093*	0.022***
	(0.089)	(0.000)
RANK_FE_FIRM_WIDTH	0.001	-0.000
	(0.774)	(0.740)
RANK_FE_FIRM_WIDTH×GOOD_NEWS	0.112	-0.003
	(0.162)	(0.626)
RANK_FE_FIRM_WIDTH×BAD_NEWS	-0.170***	0.002
	(0.007)	(0.723)
SIZE	-0.004***	0.000
	(0.002)	(0.699)
SIZE×GOOD_NEWS	0.038	0.006
	(0.537)	(0.200)
SIZE×BAD_NEWS	-0.064*	-0.006**
	(0.080)	(0.036)
F_LOSS	-0.023**	-0.001
	(0.020)	(0.157)
F_LOSS×GOOD_NEWS	-0.112	-0.138***
	(0.806)	(0.000)
F_LOSS×BAD_NEWS	-0.009	0.336***
	(0.982)	(0.000)
ROA	-0.001	0.001
	(0.954)	(0.614)

ROA×GOOD_NEWS	-2.203***	-0.059
	(0.006)	(0.323)
ROA×BAD_NEWS	2.739***	0.023
	(0.000)	(0.533)
F_HORIZON	0.014***	-0.000
	(0.001)	(0.864)
F_HORIZON×GOOD_NEWS	0.258	-0.008
	(0.300)	(0.650)
F_HORIZON×BAD_NEWS	-0.081	-0.048***
	(0.665)	(0.005)
Constant	0.012	-0.001
	(0.320)	(0.137)
Year Fixed Effects	YES	YES
Observations	4,191	4,042
Adj R-squared	0.035	0.126

This table reports the results for Hypotheses 1 and 2 when NEWS is separated into GOOD_NEWS and BAD_NEWS. GOOD_NEWS is equal to NEWS if NEWS is greater than 0, and zero otherwise. BAD_NEWS is equal to NEWS if NEWS is less than 0, and zero otherwise. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

The results for firm-fixed effects on prior forecast performance are comparable to those obtained previously in Table 16 with one exception. The interaction between RANK_FE_FIRM_WIDTH and BAD_NEWS is negative and significant. This suggests that the market perceives bad news provided by more historically precise managers and firms to be less credible.

Results for Hypothesis 2 in Column 2 suggest that analysts' reaction to management earnings forecasts news is only conditioned by manager-specific forecast accuracy when the forecast news is bad. The coefficient for RANK_FE_MGR_ACCU×GOOD_NEWS is not significant but interaction between RANK_FE_MGR_ACCU and BAD_NEWS is positive and significant suggesting that analysts view each unit of bad news issued by more historically accurate managers to be more credible.

Overall, there is some evidence that the extent of the market's and analysts' reaction to management earnings forecast news is conditioned by manager-specific forecast performance and news type.

CHAPTER 6 Conclusion

6.1 Summary

This thesis examines whether manager-specific factors condition the market's and analysts' reactions to management earnings forecasts. Given that management earnings forecasts are voluntary and, unaudited, and that managers have substantial discretion as to what, how and when to disclose management earnings forecasts, I examine whether the manager matters to the market and analysts, after controlling for firm effects.

I extend prior studies that find that individual managers exert their own 'style' on management earnings forecast accuracy, precision and frequency (Bamber et al. 2010) and that manager fixed effects on prior forecast accuracy are positively associated with stock market reactions to management earnings forecast news (Yang 2012). Using a manager-firm matched panel dataset, I estimate manager-specific prior forecast performance after controlling for from firm-specific prior forecast performance where prior forecast performance measures include prior forecast accuracy, frequency and precision. I examine whether investor and analyst reaction vary with manager-specific prior forecast performance. In addition, I build on Baik et al. (2011) and examine whether investor and analyst reaction are conditioned by manager attributes.

Hypothesis 1 predicts a positive association between manager-specific prior forecast performance and stock market reaction per unit of management earnings forecast news. Hypothesis 2 predicts a non-directional association between manager-specific prior forecast performance and analyst reaction per unit of management earnings forecast news. Hypothesis 1 builds on Yang (2012) by examining whether the stock market reaction to management

earnings forecast news is conditioned by manager fixed effects on precision and frequency. Hypothesis 2 builds on Yang (2012) by examining whether the analyst reaction to management earnings forecast news is conditioned by manager fixed effects on accuracy, precision and frequency.

The main results are generally not supportive of Hypothesis 1. No evidence is found that the stock market reactions to management earnings forecast news are conditioned by manager-specific forecast accuracy, precision and frequency. However, there is evidence that the stock market reaction to management earnings forecast news varies with firm-specific factors such as firm-specific frequency, firm-specific precision, firm size, and firm performance, as well as forecast characteristics such as loss forecasts and forecast horizon. Additional analyses that separately examine good forecast news and bad forecast news reveal that the stock market reaction to good forecast news is stronger for managers with a higher propensity to issue more frequent forecasts and more precise forecasts. These results indicate that, depending on the type of forecast news, the market reactions to management earnings forecasts are conditioned by manager-specific forecast performance.

The main tests of Hypothesis 2 support the proposition that analysts' reactions to management earnings forecast news are conditioned by manager-specific forecast performance in addition to firm-specific forecast performance. The results suggest that analysts, being more informed sophisticated users, distinguish between managers' prior forecast performance and the firm's prior forecast performance as factors influencing their perceived credibility of management earnings forecasts. Further analyses reveal that analysts' reactions to management earnings forecasts are conditioned by manager-specific prior forecast performance for bad forecast news but not good forecast news. This may imply that analysts are sceptical of good news forecasts

but are willing to react more when bad news forecasts are issued by better performing managers.

Hypotheses 1 and 2 focus on whether managers' prior forecast performance matters to investors and analysts. However, perceptions of credibility are not necessarily determined by prior forecast performance (Hirst et al., 1999). For example, some managers may have experienced luck in forecasting and some managers may have managed earnings to meet or beat their own forecasts. Prior research finds that characteristics of managers such as age, education and military experience, affect the properties of management earnings forecasts (Bamber et al. 2010). Studies in social psychology argue that cognitive, innate or psychological characteristics of individuals can affect their perceived credibility (Hovland et al., 1953). However, because it is difficult to obtain such data on managers, prior research argues for the use of observable characteristics of the manager that may be correlated with the cognitive and psychological characteristics (Hambrick, 2007) and therefore, managers' attributes may proxy for managers' cognitive and psychological traits and innate ability. Accordingly, I argue that investors and analysts may use observable attributes of the manager in forming their assessments of the perceived trustworthiness and expertise of managers and consequently of managements' earnings forecasts.

Hypothesis 3 predicts that the stock market reactions to management earnings forecasts are conditioned by manager attributes and Hypothesis 4 predicts that analysts' reactions to management earnings forecasts are conditioned by manager attributes. I test the effects of managers' personal attributes, imputed attributes and positional attributes. The tested personal attributes are sex, age, accounting/finance background, MBA qualification, legal background, Ivy league education, military experience and network size. The imputed attributes examined

are manager ability, press coverage and number of awards won. Positional attributes of the manager studied are tenure, manager/chair duality, CEO's CFO experience and charitable involvement.

Consistent with results obtained for tests of Hypothesis 1, the results for tests of Hypothesis 3 suggest that there is not strong evidence that the stock market reactions to management earnings forecast news are conditioned by managers' attributes. Multicollinearity is an issue in testing Hypothesis 3 because there is some correlation among manager attributes. Therefore, the results for Hypothesis 3 are sensitive to model specifications. However, there is consistent evidence that the stock market reactions to management earnings forecast news are stronger for forecasts issued by managers with a legal background. This could be because investors believe that managers with a legal background are more aware of litigation risk associated with missing targets or providing misleading forecasts. Alternatively, the legal background variable may proxy for other (omitted) factors, such as other network effects or innate ability of the manager that may not be correctly captured for in the model. Another potential reason for the lack of significance of manager attributes is that these variables may have mixed effects on analysts and investors reactions to management earnings forecasts.

Multicollinearity is also an issue when testing Hypothesis 4 and results are sensitive to model specifications. However, results for tests of Hypothesis 4 consistently show that analysts' reactions management earnings forecasts are stronger for managers who are also the chairperson and weaker for CEOs with CFO experience. Overall, consistent with the results for Hypothesis 2, the positional attributes of managers seem to influence analysts when assessing the credibility of management earnings forecasts.

6.2 Limitations

This study used a manager-firm matched dataset, which has the advantage of allowing the estimation of manager fixed effects on forecast accuracy, precision and frequency as distinct from the firm fixed effects on forecast accuracy, precision and frequency. However, while using this approach allows the examination of whether the manager's specific forecast performance matters to users of management earnings forecasts, it results in a potential sample selection bias. This is because if managers who meet this criteria of having worked across multiple firms are systematically different from managers who have not held CEO or CFO positions across multiple firms, then the results may not be generalizable to all CEOs and CFOs.

The sample selection criteria also result in a small sample size and therefore lower statistical power because the manager has to hold CEO or CFO positions and provide management earnings forecasts at more than one firm within the estimation period, and provide management earnings forecasts in the test period to be included in the sample. In addition, because manager movements are observed in Execucomp and management earnings forecasts are obtained from Zacks, this biases the sample towards larger firms. However, to the extent that more information is known to the market and analysts for larger firms, I would expect that this would bias against finding results.

There is a potential multicollinearity problem because many manager attributes are correlated causing the results to be susceptible to change using different model specifications. However, to deal with this issue, the association between investors' and analysts' reactions and each

manager attribute was examined individually, before examining them together in the multiple regression.

It is also likely that the proxies for managers' attributes used in this thesis are crude proxies for managers' innate abilities and characteristics. The manager attributes used may also not be capturing the perceived expertise and trustworthiness of the manager. That being said, it can be argued that proxies for the manager attributes used in this thesis are what investors and analysts can observe.

In addition, the degree to which investors and analysts react to managers' and firm's forecast performance may depend on the divergence between expected forecast performance and actual forecast performance (Rupar, 2017). This is, however, outside the scope of this study and is left for future research.

6.3 Contribution

This thesis extends the management earnings forecasts literature concerned with source credibility and market participants' reactions. It does so by examining whether manager-specific prior forecast performance and manager attributes condition market participants' assessments of the usefulness of management earnings forecasts.

The analyses show that there may be differences in what matters to investors and what matters to analysts in their assessments of the perceived credibility of manager-provided disclosures. The results suggest that analysts, being more sophisticated users, consider both manager-and

firm-specific characteristics in their assessments of management earnings forecasts while investors, on average, do not systematically consider manager attributes. The investigation also provides evidence that prior forecast performance is not the only factor that market participants use to assess the credibility of management earnings forecasts and that market participants' reactions to management earnings forecast news can vary with some manager attributes. Overall, this thesis extends our understanding of the importance and nature of source credibility for management earnings forecasts by revealing how various manager-specific factors appear to matter or do not matter to investors and analysts. In doing so, this thesis responds to a call by Dichev et al. (2013) to study the "human factor" in assessing the perceived credibility of financial disclosures.

This thesis also offers a practical contribution to firms and managers. By informing them about what matters to users, particularly with respect to individual manager track records, firms and their managers may vary their choices about their forecasting behaviour. Results may also help inform boards of directors about what matters to users of management earnings forecasts and help the board better monitor managers in this regard. Finally, the results may inform observers such as regulators and commentators in providing signals about what matters to users in terms managers' forecasting behaviour and attributes.

6.4 Future Research

Further advances in our knowledge of what influences perceptions of the credibility of voluntary disclosures will be obtained if future research addresses some of the limitations of this thesis. Because the sample is biased towards larger firms, the sample includes few loss

firms. Future research could examine how management credibility affects the usefulness of disclosures by loss firms. This could further extend our understanding of the perceived credibility of financial disclosures.

Social psychology research suggests that source credibility and message credibility overlap (Hovland et al., 1953, Abelson, 1959). Findings in this thesis suggest that message credibility can affect perceptions of source credibility and consequently perceptions of message credibility. Examination of the interactions between source and message credibility was beyond the scope of this thesis. However, future research could expand our knowledge of credibility by examining the interactions between message (forecast) credibility and source credibility.

Appendix

Appendix A: Variable Definitions

Variable Name		Variable Definition
ABS_EA_NEWS	=	Absolute value of the earnings surprise (actual earnings minus analyst consensus).
ACCURACY	=	Absolute difference between the management earnings forecasts and actual earnings multiplied by -1 and scaled by beginning of period price.
ACQ	=	Indicator variable coded as 1 if firm has an M&A during the year, and 0 otherwise.
AFREV	=	Consensus analyst forecast revision: difference between the mean analyst forecast consensus within 10 days after the management earnings forecast date and the mean analyst forecast consensus before the management earnings forecast date scaled by beginning of period price
AGE	=	Natural log of the manager's age at the beginning of the year.
ANALYST_COV	=	Natural log of the number of analysts covering the firm.
ANALYST_DISP	=	Standard deviation of analyst estimates for current period's earnings.
ANALYSTS	=	Number of analysts following the firm prior to the issuance of the management forecast.
ANNUAL	=	Indicator variable coded as 1 for annual forecasts, and 0 otherwise.
AWARDS	=	Total number of awards won at beginning of year.
BAD_EA_NEWS	=	Indicator variable coded as 1 for earnings surprises less than -0.0001
BUNDLED	=	Indicator variable coded as 1 if a management earnings forecast was issued in the 3-day window surrounding the earnings announcement.
CAR (-1, +1)	=	Market-adjusted returns for the 3-day window around the management earnings forecast date using the CRSP value-weighted index
CEO_CFO_EXPER	=	Indicator variable coded as 1 if the CEO has CFO experience, and 0 otherwise.
CHARITY	=	Indicator variable coded as 1 if the manager serves on the board of a charity during the year.
CONC	=	Herfindahl index using revenues of firms sharing the same four-digit SIC code.
EP_RANK	=	Decile rank of the firm's pre-earnings announcement earnings/price ratio.
F_LOSS	=	Indicator variable coded as 1 if the management forecast predicted a loss, and 0 otherwise.
FE_FIRM_ACCU	=	Firm fixed effect coefficient estimated from regressing average firm-year ACCU on firm-, manager-, and year-specific fixed effects
FE_FIRM_FREQ	=	Firm fixed effect coefficient estimated from regressing FREQUENCY on firm-, manager-, and year-specific fixed effects

Variable Name		Variable Definition
FE_FIRM_WIDTH	=	Firm fixed effect coefficient estimated from regressing average firm-year WIDTH on firm-, manager-, and year-specific fixed effects
FE_MGR_ACCU	=	Manager fixed effect coefficient estimated from regressing average firm-year ACCU on firm-, manager-, and year-specific fixed effects
FE_MGR_FREQ	=	Manager fixed effect coefficient estimated from regressing FREQUENCY on firm-, manager-, and year-specific fixed effects
FE_MGR_WIDTH	=	Manager fixed effect coefficient estimated from regressing average firm-year WIDTH on firm-, manager-, and year-specific fixed effects
FIN_EXP	=	Indicator variable coded as 1 if the manager has an accounting/finance degree or professional accounting/finance qualification, and 0 otherwise.
FREQUENCY	=	Number of management earnings forecasts issued in year.
GOOD_EA_NEWS	=	Indicator variable coded as 1 for earnings surprises greater than 0.0001
HORIZON	=	Number of days between the management earnings forecast date and the end of the fiscal period, divided by 365
INST	=	Percentage of firm's common stock held by institutional investors.
IVY	=	Indicator variable coded as 1 if the manager attended an IVY League school, and 0 otherwise.
LAST_BUNDLED	=	Indicator variable coded as 1 if a management earnings forecast had been previously issued for the last earnings announced.
LEGAL	=	Indicator variable coded as 1 if the manager has a law degree, and 0 otherwise.
LITRISK	=	Indicator variable coded as 1 if firm is in a high-litigation industry.
LOSS	=	Indicator variable coded as 1 if earnings for the fiscal period is negative.
M_ABILITY	=	Managerial ability, as obtained from Demerjian et al. (2012).
MBA	=	Indicator variable coded as 1 if the manager has an MBA qualification, and 0 otherwise.
MEF_ISSUED	=	Indicator variable coded as 1 if a management earnings forecast had been previously issued for the earnings announced.
MGR_CHAIR	=	Indicator variable coded as 1 if the manager serves on the board during the year.
MIL_EXPER	=	Indicator variable coded as 1 if the manager has military experience, and 0 otherwise.
MTB	=	Market-to-book value at beginning of period.
MV_RANK	=	Decile rank of the firm's pre-earnings announcement market value.
MVE	=	Natural log of the firm's market value of equity 3 days prior to the earnings announcement.
NETWORK	=	Natural log of the executive's number of connections.
NEWS	=	RAW_NEWS adjusted for bundled forecasts using the Rogers and Van Buskirk (2013) approach.

Variable Name		Variable Definition
OUTDIR	=	Percentage directors on the board that are also not officers of the firm.
PRESS_COV	=	The number of press citations for manager over a five-year period prior to the issuance of the management earnings forecast.
PRIOR_RETURN	=	Cumulative stock return over the 90-day period ending 3 days prior to the earnings announcement.
PROP_MOB	=	The percentage of the last four earnings announcements that the firm met or beat analyst expectations.
R&D	=	R&D expense scaled by total assets.
RANK_FE_FIRM_ACCU	=	Quartile rank of variable FE_FIRM_ACCU.
RANK_FE_FIRM_FREQ	=	Quartile rank of variable FE_FIRM_FREQ.
RANK_FE_FIRM_WIDTH	=	Quartile rank of variable FE_FIRM_WIDTH.
RANK_FE_MGR_ACCU	=	Quartile rank of variable FE_MGR_ACCU.
RANK_FE_MGR_FREQ	=	Quartile rank of variable FE_MGR_FREQ.
RANK_FE_MGR_WIDTH	=	Quartile rank of variable FE_MGR_WIDTH.
RAW_NEWS	=	Raw Forecast News; Management earnings forecast minus mean analysts' forecast consensus before management earnings forecast date, scaled by beginning of period price.
RESTRUCT	=	An indicator variable coded as 1 if firm is engaged in restructuring during the year, and 0 otherwise.
ROA	=	Return on assets calculated as firm i's net income in year t divided by lagged total assets.
SEX	=	An indicator variable coded as 1 if the manager is a female, and 0 otherwise.
SIZE	=	The natural logarithm of total assets at beginning of the year.
TENURE	=	Total number of years experience in the current position and the current firm at the beginning of the year.
WIDTH	=	The absolute difference between the upper bound and the lower bound of the management earnings forecast, multiplied by -1 and scaled by beginning of period price.

Appendix B: Comparison of Zacks Coverage and First Call Coverage of Management Earnings Forecasts

This thesis uses Zacks as a source for management earnings forecasts compared to Yang (2012) which uses First Call. I did not have access to data for First Call. Numbers for First Call were obtained from Anilowski et al. (2007) for the period 1995-2003. Table B1 compares available annual and quarterly observations in First Call and Zacks for the period covered by Anilowski et al. (2007).

Table B 1 Comparison between Zacks and First Call: Last Forecast Issued

YEAR	FIRST CALL ANNUAL	ZACKS ANNUAL	FIRST CALL QUARTERLY	ZACKS QUARTERLY
1995	252	63	376	115
1996	345	99	645	225
1997	491	87	925	183
1998	1031	23	1694	197
1999	1269	42	1708	313
2000	1356	82	1890	545
2001	2748	643	3429	1521
2002	3414	1013	2906	1693
2003	3125	1014	2563	1795

Zacks' coverage of annual management earnings forecasts ranges from about 2% to 32% of First Call. Zacks' coverage of quarterly management earnings forecasts ranges from about 12% to 70% of First Call. The Zacks coverage for quarterly management earnings forecasts improves after 2000, coinciding with the implementation of Regulation Fair Disclosure which prohibits disclosure of material information to select individuals. Overall, it can be seen that Zacks has much lower coverage than First Call, especially in the earlier periods, which is a possible reason why this thesis has a much smaller sample than the closest study, Yang (2012).

Appendix C: Adjusting Forecast News using the Rogers and Van Buskirk (2013) Method

Rogers and Van Buskirk (2013) suggest that, for management earnings forecasts bundled with earnings announcements, the traditional forecast news measure calculated by taking the difference between the management earnings forecast and consensus analyst forecast is stale. This is because the earnings surprise unveiled at earnings announcements affects analyst expectations of the next period's earnings. They propose using a conditional forecast news measure which is estimated as follows.[45] First-stage regression:

$$\begin{aligned} P(Bundled=1) = {} & \alpha_0 + \alpha_1 MEF\_ISSUED + \alpha_2 LAST\_BUNDLED \\ & + \alpha_3 GOOD\_EA\_NEWS + \alpha_4 BAD\_EA\_NEWS + \alpha_5 ABS\_EA\_NEWS \\ & + \alpha_6 LOSS + \alpha_7 ANALYST\_DISP \\ & + \alpha_8 PRIOR\_RETURN + \alpha_9 MVE + \alpha_{10} ANALYST\_COV \\ & + \alpha_{11} PROP\_MOB + YEAR + INDUSTRY + \varepsilon \end{aligned} \quad (C.1)$$

Bundled is an indicator variable equal to one if there is a management earnings forecast issued in the three-day window surrounding the earnings announcement. MEF_ISSUED is an indicator variable equal to one if a management earnings forecast had been previously issued for the earnings announced. LAST_BUNDLED is an indicator variable equal to one if a management earnings forecast had been previously issued at the last earnings announcement. GOOD_EA_NEWS is an indicator variable equal to one for earnings surprises (actual earnings

[45] The Rogers and Van Buskirk (2013) model includes an indicator variable that identifies earnings announcements that are concurrent with conference calls. Similar to Billings et al. (2015), this variable is omitted from the model because I did not have access to conference call data.

minus analyst estimates) greater than 0.0001 and BAD_EA_NEWS is an indicator variable equal to one for earnings surprises (actual earnings minus analyst estimates) less than -0.0001. ABS_EA_NEWS is the absolute value of the earnings surprise (actual earnings minus analyst estimate). LOSS is an indicator variable equal to one for negative reported earnings. ANALYST_DISP is the standard deviation of analyst estimates for current period's earnings. PRIOR_RETURN is the cumulative stock return over the 90-day period ending three trading days prior to the earnings announcement. MVE is the natural logarithm of the firm's market value of equity three days prior to the earnings announcement. ANALYST_COV is the natural logarithm of the number of analysts covering the firm. PROP_MOB is the percentage of the last four earnings announcements that the firm met or beat analyst expectations. YEAR is the year of the earnings announcement. INDUSTRY is the 2-digit SIC code of the firm.

Second-stage regression:

$$\begin{aligned} AR_{NF} = \beta &+ \beta_1 GOOD\_EA\_NEWS + \beta_2 BAD\_EA\_NEWS \\ &+ \beta_3 GOOD\_EA\_NEWS \times EA\_NEWS + \beta_4 BAD\_EA\_NEWS \times EA\_NEWS \\ &+ \beta_5 PRIOR\_RETURN + \beta_6 EA\_NEWS \times ABS\_EA\_NEWS \\ &+ \beta_7 EA\_NEWS \times MV\_RANK + \beta_8 EA\_NEWS \times EP\_RANK + \beta_9 P(Bundled) + \varepsilon_{NF} \end{aligned} \quad (C.2)$$

AR_{NF} is the equal to the mean analyst forecast revisions for the group of firms not providing management earnings forecasts, measured as the mean analyst estimate five trading days after the current period's earnings announcement minus the mean analyst estimate immediately prior to the current period's earnings announcement, scaled by lagged stock price. MV_RANK is the decile rank of the firm's pre-earnings announcement market value. EP_RANK is the decile rank of the firm's pre-earnings announcement earnings/price ratio. P(Bundled) is the predicted

probability of the firm issuing a management earnings forecast bundled with an earnings announcement, as estimated by the first-stage regression.

A vector of coefficients from the non-forecasting group is obtained from Model (C.2) and applied to obtain a fitted value of AR_F for the forecasting group, that is, an estimate of how analysts would have revised their estimates in the absence of management earnings forecasts. The conditional analyst forecast consensus is calculated as the pre-earnings announcement analyst forecast consensus plus the predicted revision. Conditional forecast news is then calculated as the difference between the management forecast and the conditional analyst forecast consensus.

Appendix D: Testing Hypothesis 1 using Yang (2012) Estimation Period and Alternative Test Periods

Yang (2012) examines the association between manager-specific forecast accuracy and the stock market reaction per unit of forecast news. The Yang (2012) estimation period for manager fixed effects on forecast accuracy is 1996-2005 and the test period is 2006-2009. As previously discussed, the test period includes managers whose fixed effects are estimable during the estimation period and who also provide management earnings forecasts in the post-estimation period. Results for Hypothesis 1 using the Yang (2012) study period are presented in Section 4.4.1.

Table D1 presents the results using the Yang (2012) estimation period 1996-2005 and alternative test periods. Columns 1 and 2 present the results when the test period 2006-2010 is used. The number of observations when the 2006-2010 test period is used increases to 1,799 with 105 unique managers. Columns 3 and 4 present the results when 2006-2011 test period is used. This increases the number of observations to 2,002 and 106 managers. Columns 5 and 6 show the results when 2006-2012 test period is used which increases the number of observations to 2,234 with 107 managers. Finally, Columns 7 and 8 show the results when test period 2006-2013 is used. The number of observations when test period 2006-2013 is used is 2,645 with 110 managers.

Overall, results are similar to those obtained in Table 14 when test period 2006-2009 is used. As seen in Columns 1 to 8, there does not seem to be a significant association between manager fixed effects on accuracy and the stock market reaction per unit of forecast news (RANK_FE_MGR_ACCU×NEWS). When firm fixed effects on accuracy are included in the

models as controls, RANK_FE_FIRM_ACCU×NEWS remains positive and significant, similar to results obtained when the test period is 2006-2009. This suggests that the market reacts more strongly to forecast news issued by firms with a historic propensity to issue more accurate forecasts.

Table D 1 Testing Hypothesis 1 using Yang (2012) study period and alternative test periods

VARIABLES		(1) 2006-2010 CAR(-1,1)	(2) 2006-2010 CAR(-1,1)	(3) 2006-2011 CAR(-1,1)	(4) 2006-2011 CAR(-1,1)	(5) 2006-2012 CAR(-1,1)	(6) 2006-2012 CAR(-1,1)	(7) 2006-2013 CAR(-1,1)	(8) 2006-2013 CAR(-1,1)
RAW_NEWS	+	4.826***	6.638***	5.455***	6.767***	4.773***	6.236***	3.845***	4.981***
		(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
RANK_FE_MGR_ACCU	?	-0.001	-0.000	-0.000	0.000	0.001	0.001	0.001	0.001
		(0.638)	(0.924)	(0.820)	(0.951)	(0.605)	(0.400)	(0.452)	(0.293)
RANK_FE_MGR_ACCU×RAW_NEWS	+	-0.196	-0.072	-0.174	-0.127	0.069	0.068	0.204	0.214
		(0.389)	(0.757)	(0.395)	(0.536)	(0.682)	(0.682)	(0.193)	(0.172)
RANK_FE_FIRM_ACCU	?		0.004**		0.004*		0.005***		0.005***
			(0.043)		(0.060)		(0.009)		(0.004)
RANK_FE_FIRM_ACCU×RAW_NEWS	+		0.607**		0.518**		0.509**		0.421**
			(0.014)		(0.018)		(0.013)		(0.027)
SIZE	?	0.000	-0.002	0.000	-0.002	0.000	-0.003*	0.000	-0.003*
		(0.692)	(0.235)	(0.813)	(0.240)	(0.935)	(0.074)	(0.863)	(0.057)
SIZE×RAW_NEWS	+	-0.345**	-0.770***	-0.407***	-0.739***	-0.383***	-0.717***	-0.314**	-0.586***
		(0.035)	(0.001)	(0.006)	(0.000)	(0.005)	(0.000)	(0.013)	(0.001)
F_LOSS	?	-0.013	-0.017	-0.018*	-0.021**	-0.015	-0.018*	-0.015	-0.018**
		(0.237)	(0.122)	(0.078)	(0.037)	(0.128)	(0.060)	(0.101)	(0.042)
F_LOSS×RAW_NEWS	-	-1.189*	-1.752***	-1.338**	-1.738***	-0.974*	-1.374**	-1.116**	-1.436***
		(0.060)	(0.009)	(0.026)	(0.005)	(0.072)	(0.015)	(0.034)	(0.008)
ROA	?	-0.051*	-0.047*	-0.041	-0.037	-0.022	-0.018	-0.030	-0.026
		(0.052)	(0.073)	(0.102)	(0.138)	(0.343)	(0.450)	(0.161)	(0.231)
ROA×RAW_NEWS	+	9.072***	7.903***	9.419***	8.336***	5.719***	5.303**	3.724*	3.425*
		(0.002)	(0.007)	(0.001)	(0.003)	(0.008)	(0.015)	(0.064)	(0.091)
HORIZON	?	0.005	0.006	0.005	0.006	0.006	0.007*	0.006	0.007*
		(0.315)	(0.236)	(0.288)	(0.215)	(0.152)	(0.098)	(0.123)	(0.078)
HORIZON×RAW_NEWS	-	-0.690	-0.566	-0.815	-0.566	-0.545	-0.359	-0.269	-0.112
		(0.308)	(0.403)	(0.191)	(0.370)	(0.338)	(0.529)	(0.622)	(0.838)
Constant		0.003	0.009	0.003	0.008	-0.001	0.007	-0.001	0.006
		(0.818)	(0.437)	(0.793)	(0.451)	(0.955)	(0.514)	(0.880)	(0.521)
Year Fixed Effects		YES	YES	YES	YES	YES	YES	YES	YES
Observations		1,799	1,799	2,002	2,002	2,234	2,234	2,465	2,465
Adj R-squared		0.026	0.031	0.034	0.037	0.038	0.042	0.039	0.043

This table provides the results when the Yang (2012) hypothesis is tested using Yang (2012) estimation period 1996-2005 and alternative test periods starting from 2006-2010 and ending with 2006-2013. Variable definitions are included in Appendix A. ***, **, and * indicate significance at the 0.01, 0.05 and 0.10 level, respectively.

Appendix E: Testing Hypothesis 1 using All Performance Measures and Yang (2012) Estimation and Test Period

As previously mentioned, Yang (2012) examines the relation between manager-specific forecast accuracy and the stock market reaction per unit of forecast news. Table E1 below provides the results using all manager-specific forecast performance (accuracy, frequency and width) measures when the Yang (2012) estimation period of 1995-2005 and test period of 2006-2009 is used.

Table E 1 Results using all performance measures and the Yang (2012) study period

		(1)	(2)	(3)	(4)
		2006-2009			
VARIABLES		CAR(-1,1)			
NEWS	+	-0.312	-1.147	-0.240	-1.883*
		(0.626)	(0.198)	(0.692)	(0.066)
RANK_FE_MGR_ACCU	?	0.001			-0.001
		(0.674)			(0.716)
RANK_FE_MGR_ACCU*NEWS	+	-0.017			-0.019
		(0.849)			(0.836)
RANK_FE_MGR_FREQ	?		-0.000		-0.001
			(0.903)		(0.668)
RANK_FE_MGR_FREQ*NEWS	+		0.089		0.086
			(0.280)		(0.311)
RANK_FE_MGR_WIDTH	?			0.002	0.003
				(0.231)	(0.249)
RANK_FE_MGR_WIDTH*NEWS	+			0.028	0.032
				(0.719)	(0.699)
RANK_FE_FIRM_ACCU	?	0.006**			0.002
		(0.025)			(0.705)
RANK_FE_FIRM_ACCU*NEWS	+	-0.087			-0.072
		(0.489)			(0.689)
RANK_FE_FIRM_FREQ	?		0.001		0.000
			(0.671)		(0.990)
RANK_FE_FIRM_FREQ*NEWS	+		0.145		0.197*
			(0.135)		(0.058)
RANK_FE_FIRM_WIDTH	?			0.005**	0.005

				(0.014)	(0.223)
RANK_FE_FIRM_WIDTH*NEWS	+			-0.028	-0.055
				(0.758)	(0.691)
SIZE	?	-0.001	0.002	-0.000	-0.001
		(0.517)	(0.160)	(0.869)	(0.646)
SIZE*NEWS	+	0.034	0.034	-0.005	0.137
		(0.733)	(0.641)	(0.947)	(0.232)
F_LOSS	?	-0.032**	-0.031**	-0.033**	-0.033**
		(0.027)	(0.033)	(0.026)	(0.023)
F_LOSS*NEWS	-	-1.100*	-1.251*	-1.204*	-1.182*
		(0.093)	(0.054)	(0.065)	(0.076)
ROA	?	-0.031	-0.035	-0.028	-0.032
		(0.354)	(0.301)	(0.403)	(0.350)
ROA*NEWS	+	2.839*	2.155	2.562*	2.273
		(0.051)	(0.133)	(0.077)	(0.130)
HORIZON	?	0.010*	0.010	0.010	0.010*
		(0.093)	(0.109)	(0.105)	(0.097)
HORIZON*NEWS	-	0.304	0.289	0.339	0.328
		(0.390)	(0.416)	(0.338)	(0.357)
Constant		-0.008	-0.023	-0.019	-0.011
		(0.586)	(0.277)	(0.182)	(0.630)
Year Fixed Effects		YES	YES	YES	YES
Observations		1,267	1,267	1,267	1,267
Adj R-squared		0.008	0.006	0.009	0.007

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